E.H.R.

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THE INDIAN LANCET.

A Weekly Journal of Medicine, Surgery, Public Health and of General Medical Intelligence.
Edited by RUDOLPH MONNIER M.B., M.S., Edin.

Vol. XXXI.] CALCUTTA, MONDAY, FEBRUARY 3rd, 1908. [No. 5

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Qui docet, discit

PERSONAL OBSERVATIONS OF A CASE OF PARALYSIS AGITANS.

By T. G. Stephens M.D.

The subject of the present article, when the first indications of the disease were observed, was a man aged sixty-nine years, who had never been addicted to vicious habits, and lived four years after the first symptoms were observed.

Paralysis agitans is regarded as the gravest of diseases, and generally found to exist in the latter half of life, although typical cases have been reported among juveniles. The disease was first fully described by Parkinson, of London, in 1817. The trend of medical literature of the knowledge of its etiology, anatomical seat, and treatment has not improved to any extent. Strumpel says: "We must, therefore, confess that we have even had a doubt whether it is justifiable to claim that paralysis agitans is an affection of the nervous system at all, or whether it may not possibly be of purely muscular origin."

The first symptoms in this case were in the extremities, especially the right arm; yet it was also notable in the legs, in the head and face before his death. Charcot states that the head and facial muscles are never implicated, but there is doubt about this point. At first he became quiet when in bed, but later on unlike Sydenham's chorea, the movement did not cease, and hindered him from getting sleep. Sometimes by lying supine, having his arms placed close to his sides and his hands fixed under his thighs, he would rest quietly for a few minutes. He became very awkward in feeding himself. The position of the body was the characteristic. Not only the head, which afforded a good deal of resistance to passive movements, but also the whole trunk, was somewhat bent over; it appeared as if the center of gravity was so displaced that the patient was every moment in danger of falling forward. His arms, which were somewhat bent at the elbows, were in close proximity to the body. The thumbs rested against the fingers, so that the hand assumed somewhat the position it would in writing; the fingers would be somewhat flexed on the metacarpal joints. His knees were so close together that his trousers rubbed against each other by the trembling movements, and were not a little interfered with. The legs were usually slightly flexed at the knee-joints while walking. Nothing remarkable could be noticed in the joints of the toes. He seemed to be in a constant state of perplexity and uncertainty; his appetite was almost normal throughout, but emaciation was extreme.

We will now turn our attention from the characteristics of Parkinson's disease to the most notable complications in this case, viz., incomplete and complete retention of urine, enlargement of the prostate gland, cystitis, orchitis, acute paralysis ascendens (Landry's disease), and stenocardia. After suffering for some time from incomplete retention of urine the patient resorted to catheterization, complete retention following, and I was summoned to his assistance. My preliminary diagnosis was a multiple one. On making a physical examination I found the middle lobe of the prostate gland much enlarged, attempting to introduce a soft flexible catheter, I found much unevenness along the urethra, an exquisite sensitiveness and tenderness of the prostatic portion. Following the removal of the instrument, a small quantity of blood mixed with pus followed. The symptoms of both prostatitis and cystitis were well pronounced, and there is no doubt but that the later was caused by pathogenic bacteria being carried on unsterilized catheters. After making several unsuccessful attempts to use the catheter, commencing with a soft, flexible one, then a silver catheter with a large curve, I asked for consultation, and three physicians responded who were equally as unsuccessful as myself. The patient's condition being extremely urgent, the ovoid shape of the bladder occupying a position much above the plane of the symphysis pubis, almost reaching the umbilicus, I punctured it (suprapubic cystotomy), taking away five pints of fluid, mostly urine associated with mucus and pus, which imparted a glairy, stringy character to the mixture, and increased the difficulty of its being discharged. For a week after the operation, immediately after emptying the bladder, I washed it out through the artificial opening with hot, sterilized water containing from 15 to 20 per cent. of paroxide of hydrogen once or twice a day, applying the same treatment

to the prostatic urethra. On the seventh day following the paracentesis vesica I attempted to use a catheter by the natural route, and the urethra seemed to be too sensitive; but on the ninth day I succeeded without any trouble with a French instrument, a boule, which was extremely flexible and had a long tapering extremity terminating in a round, bulbous point. We then permanently closed the new opening, continuing the local treatment through the urethra; but in a few days the catheter refused to act well; it seemed to drag on the floor of the urethra. I then used another, called coudee or elbow catheter, with permanent success. This catheter has a soft and flexible stem; but towards the point where it is turned so as to form a short beak, the material from which it is composed is made more firm and stiff. As it passes down the urethra the beak keeps close to the roof and slides over any obstruction which may exist in the floor of the canal, and is used especially in prostatic affections.

The general treatment consisted mostly of arbutin (alkaloidal) and urotropin. The patient made a rapid recovery from these intercurrent diseases and was soon able to attend to his vocation, being a banker. His tremulous movements never improved, but he had an attack of influenza, double orchitis succeeding. By using a new catheter, well sterilized and a little local treatment he was soon around again for a few days, when the toxic or infectious processes began to show up anew with general malaise, slight fever, headache, loss of appetite, pains in the back and extremities. This anomaly proved to be premonitory of the final and lethal complication of the case.

The diagnosis in these cases is not always easy, being simulated by multiple neuritis and acute myelitis. In the latter the paralysis may be ascending or descending, often following attacks of influenza, and may extend through the larger part of the spinal cord and is known as ascending paralysis.

There seem to be two forms of paralysis recognizable. In one the lesion is primarily of the cord and of the oblongata; in the other it is a neuritis with concurrent involvement of the cord, In consequence of the development of acute paralysis ascendens (Landry's paralysis), commencing with a paresis of his feet and ankles, the patient was compelled to remain in bed, and in twenty-four hours the disease ascended to his pelvis; soon his arms became paretic, death ascending from below upward, and his decubitus dorsal; perspiration profuse; respiratory disturbances now begin, with bulbar symptoms. Respiratory paralysis is noticeable, respiration labored and difficult, the movements of the diaphragm lessen, the paroxysms of coughing are weaker; he complained of much pain and distress about the heart, and difficulty of swelling; his mind aberrated, with difficulty in articulation, paresis of the soft palate, and his lips set in. Death took place by apnœa and exhaustion by innutrition.—Medical Bulletin.

HINTS FOR THE NURSE.

Keep the patient in a quiet, sunny room, if possible, with an open window or a fireplace in the room. Remove all heavy curtains, table covers, hangings; keep the temperature just below 70 deg. Have as far as possible, no visible evidence of medicine about the room.

In giving medicine roll the child in a blanket, with its hands well inside; raise its head upon your left knee and hold its small nose quite gently with the left finger and thumb. Put the spoon containing the medicine as far over the tongue as possible and the fluid will go down. Pour slowly, so as not to choke the child.

Remember that the excitement, which is nothing to an adult, is everything to a child that all preparations must be completed before washing or bed-making, and that fresh air is essential to recovery.

Encourage your children to walk alone and not depend upon being led by the hand, as this is always done; they are apt to become high shouldered.

Do not permit a child to use more than one pillow unless there is some special reason. The child gets more complete rest with the head low, the strain on all the muscles being relaxed. High pillows push the shoulders forward and prevent the chest from being properly expanded.

If a child's fingers have been slightly burned, the pain can be relieved by holding them in cold water for a few minutes quite five, or even ten.

No irritable or nervous person should ever nurse a child; it requires endless patience, cheerfulness, and tact, and is very fatiguing work.

THE DIAGNOSIS OF GENERAL PARALYSIS.

By F. W. MOTT, M.D., F.R.S., F.R.C.P.

A correct diagnosis of general paralysis in its early stages may be of very great importance, for momentous issues may arise, in relation to medico-legal questions, involving criminal responsibility, and testamentary validity. Moreover, social questions, relating to marital responsibilities and duties, professional and business capacity, may necessitate an unqualified opinion as to whether or no a patient is suffering from this fatal disease. To those, who believe, as I do, that, practically speaking, only those suffer from general paralysis, who have acquired, or inherited syphilis, it is always necessary to discuss the question of previous syphilitic infection in making a diagnosis. Now, because it cannot be proved by the history, or by residua on the body, that the patient has inherited, or acquired, syphilis, it must not be assumed that syphilis can be excluded. The whole of the facts must be considered in a question of this sort, and I propose therefore, before considering the signs and symptoms of general paralysis, its different types, and the differential diagnosis from other diseases to discuss the relation of syphilis to the disease.

In Scandinavian countries, where syphilis has long been a notifiable disease, the causal connection between it and general paralysis has long been recognised; indeed, this connection was first pointed out by Esmarck and Jessen, and later by Kjelberg. But it was Fournier, whose vast experience gave him unusual opportunities of observing the latter effect of syphilis, who first pointed out that tabes was a post-syphilitic disease, and, subsequently, he included general paralysis, adding that the two were so closely related to one another in their ætiology that they might be regarded as one disease, which he termed parasyphilis. Fournier, having made this pronouncement, was at first violently opposed, but in nearly all countries the opinion has steadily gained ground that syphilis is, if not the essential cause, by far the most important cause of general paralysis.

Ert, Mobius, Mendel in Germany, Raymond and Regis in France, collected statistics, and strongly supported Fournier. Savage, so far as I know, was the first in England to call attention to the relationship of syphilis to general paralysis. Gowers has always advocated the syphilitic origin of tabes likewise Ferrier. The last named, in his valuable Lumleian lectures advocates the syphilitic origin of both tabes and general paralysis, which he regards as one disease, affecting different parts of the nervous system. It was in British asylums that syphilis, as a cause of general paralysis, was not recognised; in fact, the returns of syphilis, as a cause of insanity, were until recent years so few as to give the impression that syphilis had no causal relationship at all.

The work of Hirsch and Jadassohn showed that only in a little over 50 per cent. of the cases of general paralysis could signs of syphilitic residua, in the form of scar on the penis, or other signs on the body, be obtained; and it is my experience that, in both tabes and general paralysis, the effects of the poison have usually been mild, often unobserved, and therefore untreated. In discussing various views as to why this happens, let me first call attention to the dictum of Kraft-Ebbing, that general paralysis is a product of civilisation and syphilisation. The opponents to this doctrine hold that there are numbers of cases of general paralysis in which there is neither a history nor sign on the body of syphilis; how can it therefore be due to syphilis? He answered the question thus:—I have taken nine cases of general paralysis, in which there is no history of syphilis, and in which there are no signs of syphilis on the body: I have inoculated these nine individuals with the virus of a typical hard chancre, and watched these patients for 80 days. Not one of them showed any signs of primary rose or secondary symptoms; the only conclusion to be derived was that they had inherited or acquired syphilis, and were therefore immune. Moreover, it may be inferred that they were immune because the cells of their body were producing anti-syphilitic bodies, and this explains why the paralytics are rarely if ever seen suffering from a primary sore or secondary symptoms, in spite of the fact that, in the initial stage of the disease, a hyperœsthesia sexualis is a frequent symptom, causing promiscuous sexual intercourse, and liability to infection.

An argument has been advanced that a certain class of the population, who are more syphilised than others, do not especially suffer from general paralysis and tabes, namely, prostitutes; but Kron's observations show that there are more cases of tabes among prostitutes, if they are taken from a period of life when the disease commences, for it is between 35 and 45 especially that it first manifests itself; for obvious reasons, this is a period of life when prostitutes are not following their calling. Again, in many countries, where syphilis is very rife—Egypt, Abyssinia, Algeria—it has been said that tabes and general paralysis do not exist. This has been shown to be incorrect, and owing to imperfect knowledge and diagnosis. It is not likely that well-advanced cases of tabes and general paralysis would be so prevalent as in civilised countries, where more favourable conditions of environment would allow them to live longer. I have seen general paralysis in negroes, and in an Arab, who died at Claybury. In fact wherever syphilis exists, these parasyphilitic affections likewise occur; but it is in the highest degree probable that there is great force in Kraft-

Ebbing's dictum that the conditions of civilisation tend to favour these late manifestations of neural decay as the result of syphilis.

There is no doubt that, comparing true syphilitic disease of the brain and spinal cord, we fine more often evidence of syphilitic residua on the body, and a more definite history of primary sore and secondary symptoms, than in general parasysis and tabes. These diseases, as Hitzig first pointed out, often follow what is termed a soft sore, and he came to the conclusion, as did Buzzard, that there may be several poisons which produce different effects, and Hitzig cited the analogy of diphtheria, in which as is well known, a mild attack, often unrecognised, leads to post-diphtheritic paralysis. Recently, Max Lowenthal has advocated a somewhat similar explanation except that he considers that the anti-toxin, which gives immunity in syphilis, produces an altered metabolism injurious to the nervous structures. Many French neurologists and others have cited cases in which several people have been infected from the same source, and have later developed either syphilitic disease of the nervous system, or parasyphilis. It is possible that there is a special neurotoxic virus, and a remarkable instance in support of this has been afforded by Brosius, who relates an account of seven glass blowers, who suffered from chancre of the lip. He had the opportunity of seeing five of these ten years later; three had certainly developed tabes or general paralysis, and one probably so. This seems rather more than can be explained by coincidence; it may however be due to the fact that there are fewer lymphatic glands between the lip and the central nervous system than when infection occurs in the ordinary situation. Oppenheim, however, throws doubts upon the view that extra genital chancre is more liable to be followed by severe nervous disease. I have brought forward reasons for showing that the ætiology of tabes and that of general paralysis are practically identical; also that the period of time elapsing between infection and the commencement of symptoms, is identical; that numbers of cases being with spinal symptoms, like ataxy, and end in general paralysis; that some cases begin with optic atrophy, and end in general paralysis; that cases being with mania like general paralysis, and end in tabes. I have collected and described* over 70 cases of such and there is no hard and-first line between the two diseases, clinically or pathologically. The most important objective sign of these para-syphilitic affections is the Argyll-Robertson pupil, the unequal pupils, and the pupil with either a transitory, or continuous irregular outline. These conditions (except the unequal pupils) are met with in no other diseases than syphilis and parasyphilis. Among those cases, I have described seven cases of husband and wife (conjugal paralysis), one suffering from tabes, the other from general paralysis. Such cases of conjugal paralysis are not common; seeing that three per cent. to five per cent. of syphilised persons subsequently develop paralysis or tabes, it follows that a certain number of husbands and wives must be affected, and the cases are not sufficiently numerous to show that there is a special neurotoxic virus, for we have to remember what a large number of male general paralytics there are, whose wives are in no way affected. Why it should affect the spinal cord in the individual, and the brain in another, is still a matter of speculation and polemical discussion. Edinger has brought forward strong arguments in favour of its being due to stress on particular systems of neurons, and he has endeavoured to show that the leg-weary postman, officer, engine driver, policeman, the woman who work the sewing machine, are especially liable, to locomotor ataxy. His opponents point to the hardy mountaineers of Bosnia and Herzgovina, who are racially syphilised, and who yet rarely, if ever, suffer from tabes.

Alcoholism, and the stimulating influence of a meat diet, have been adduced as causes of general paralysis, and some of the older generation of alienists still regard alcohol as an efficient and sole cause in some cases. I have now collected more than 40 cases of juvenile general paralysis, congenital syphilis could be determined in 80 per cent., and in the remainder it could not be excluded; but the existence of syphilis can very often only be determined by careful examination of brothers and sisters, by the history in the mothers of miscarriages and still-births, and by a careful examination and inquiry of both parents. It is remarkable how often one found absolutely no signs of syphilis on the body of a juvenile paralytic patient suffering from general paralysis, whereas brothers and sisters showed well-marked signs. A case, which recently came before my notice, is so instructive in this respect that I cannot refrain from briefly alluding to it.

A boy, aged 15, who showed no signs on his body indicating syphilis, died of general paralysis. I obtained the following history from the father, who had contracted syphilis five years before he was married, and was treated by eminent specialists, and was told he was perfectly safe in marrying. In the great majority of instances, this would have proved true, but, in this particular instance, it was disastrous. His first child lived but 12 hours, the second 2 days, the third was healthy, until between 9 and 10 years, when she developed keratitis, which under the influence of grey powders, cleared up. Later, however, she developed nerve deafness, and the specialist, whom he consulted for this, said that, if he had continued the mercury treatment, she probably would not have become deaf.

*Tabes in Hospital and Asylum Practice, Archives of Neurology, Vol. II.

Some of these cases, however, show well-marked signs of syphilis, for example:—

A boy, aged 9, attended the out-patient department at Charing Cross. He had had a fit at school; he had well-marked Hutchinson's teeth, rhagades round the mouth, an internal strabismus, and well-marked choroido-retinitis. Still-births and miscarriages had preceded his birth, but the mother herself had never suffered. I lost sight of him for six years, when I found him dying of general paralysis in Colney Hatch Asylum. The fit he had was probably the onset of the disease. It usually begins at puberty, but, as in this case, it may begin much earlier.

I have noticed that a considerable number of these cases, quite 15 per cent. have occurred in patients whose fathers, and occasionally a mother, have died of general paralysis. Occasionally, father and son are in the asylum together. It is remarkable that the two sexes are about equally affected in the juvenile form, whereas, in the adult, males are affected practically in proportion to the greater incidence of syphilis in the male sex over the female. Thus we find general paralysis is common among the lowest classes of women, and decreases as we rise in the social scale; but, inasmuch as syphilis is common among every class of the community in the male sex, so are general paralysis and tabes met with in proportion relatively to the class and sex incidence of syphilis. It is rare among priests and Quakers; I have seen two cases in priests, both with a history of syphilitic infection. About 3 per cent. of the cases of general paralysis, dying in the asylums, are certainly due to conginital syphilis, and are of the juvenile kind. I recently saw an interesting case of a man, who died of general paralysis, when he was 28 years of age, He had no signs of syphilis on the body, but I found that his father had died at Claybury, about ten years before, of general paralysis. This patient had a fit when he was 18, and, from that time onwards, had shown some mental symptoms, but it was not till two or three years before he died that he became so bad that he was separated from his wife, and admitted to an asylum, where he died. The post-mortem examination revealed the most advanced degeneration of the brain characteristic of general paralysis; probably the fit, which he had at 18, marked the onset of the disease.

The fact that juvenile paralysis occurs as a result of congenital syphilis shows that the syphilitic poison can act in producing this degeneration apart from sexual excesses, alcoholism, mental stress, etc., and it indicates that, however powerful may be these influences in accelerating the onsets and course of the disease in the adult, syphilis is the essential cause.

Now we may ask why, if syphilis is the essential cause, do not all the syphilised persons develop these para-syphilitic affections? There can be no doubt that those conditions, which tend to cerebral or spinal neurasthenia, will tend, in a person infected with syphilis, to the development of general paralysis and tabes. It may then be said that juvenile general paralytics have not been subjected to these influences, but there can be no doubt that the syphilitic poison of itself will tend to nervous exhaustion, and, were it not for the fact that syphilis produces miscarriages, abortions, still-births, and death in early infancy, the number of juvenile paralytics and cases of other nervous diseases, functional and organic, due to congenital syphilis, would be infinitely more numerous than they are.

Why should the mild cases especially develop these para-syphilitic affections.

Kraft-Ebling's experiment, already referred to, indicates that they are throwing out anti-syphilitic bodies which gives them immunity. All the cells of the body are engaged in this operation. Now the cells of the nervous system, especially the brain, the most complete and differentiated in structure and function of all the cells of the body, are perpetual elements, incapable of regeneration, and, having once acquired the habit of throwing out these anti-toxins, they continue doing so all the rest of the life of the individual.

Thus they lose their durability, and the physiological margin of latent potential depending upon normal metabolism is thereby diminished, so that, if any stress occurs, destructive metabolism exceeds constructive, and decay sets in, and the decay is progressive and continuous.

This theory is rendered more than probable by the fact that Wassermann, Morgenroth, Plaut, Sterts, and others have shown the existence of anti-syphilitic bodies in the cerebro-spinal fluid withdrawn from cases of tabes and general paralysis.

Some authorities, Lessar, Bose, Hirschl, and others, hold that general paralysis and tabes are not parasyphilitic affections, but attenuated quaternary syphilis, and maintain that the lesion does not essentially differ from syphilis. Certainly there is proliferation of lymphocytes and plasma cells, and a tenddency to connective tissue formation in all forms of syphilis and parasyphilis.

Polymorpho-nuclear infiltration is not met with, unless there is secondary microbial infection. The fact that syphilis is due to the spirochæta pallida, which Schaudinn looked upon as a modified, trypanosome, and that chronic trypanosome infections, such as sleeping sickness and the mal-de-coit or dourine

of horses, produce a lymphitis of the central nervous system affecting the membranes and the perivascular spaces, closely resembling in many ways diffuse syphilitic meningo-encephalitis, general paralysis, and tabes, is of great interest. Moreover, how this lymphocyte and plasma cell infiltration, which is characteristic of all these diseases, is produced is not known. Possibly, both the trypanosome, and the spirochæta may undergo some modifications, and form an intre-cellular resting stage, which, at a favourable moment, owing, to depression of vitality of the tissues, commences to multiply and proliferate.

This seems possible in the case of the gumma, as we know that a syphilitic person, even 20 years after the primary infection, may, in consequence of an injury, develop a neoplastic formation, and this structurally shows essentially the same fixed cell hyperplasia as met with in the primary sore and secondary eruptions, which are due to the presence of the spirochæta in the lymph spaces and channels of the tissues. The protozoal origin of syphilis may, in the future, lead to a change of opinion in regard to these (so-called) parasyphilitic affections.

Having thus briefly sketched some of the more important facts relating to the syphilitic origin of general paralysis, we are prepared to recognise that, in making a diagnosis, the absolute exclusion of syphilis, either acquired or hereditary, would enable us to practically exclude the possibility of the case being general paralysis or tabes, but cases will arise, very occasionally, in which we believe we can exclude syphilis with almost certainty. I have met a few cases myself, but subsequently, I have either been able to prove the possibility of the syphilitic infection, or have had doubts whether syphilis could be excluded. It may be remarked that Crocker could obtain a history of infection in only 80 per cent. of well-marked syphilitic skin diseases.

A well-marked case of general paralysis, with grandiose delusions, with unequal, irregular pupils, either reacting sluggishly to light, or altogether inactive to light, and active to accommodation, with tremor in the tongue and face muscles, tremulous, slurred speech, tremulous writing with syllables left out, and in thought, speech, and writing, a shedding of the higher functions of the mind apparent, a shuffling gait, with exaggerated knee-jerks, is a clinical picture which the student has put before him as the typical general paralytic, which even the educated layman is able to recognise; but it is not in such cases that there is difficulty in diagnosis; it is in the early prodromal stages of the disease, in the atypical cases, the juvenile cases, cases complicated with other diseases, cases complicated by alcoholism, lead, arterio-sclerosis, and syphilitic brain disease; but especially is it difficult to decide whether a case is one of neurasthenia, or the prodromal stage of general paralysis; for it is the neurasthenic, the subject of syphilis; who is especially liable to develop general paralysis.

Again, certain cases of chronic alcoholism may closely simulate general paralysis, so that they are often termed pseudo-paralysis; or the acute hallucinosis and paranoidal forms of alcoholic insanity may erroneously be mistaken for early general paralysis. Sometimes mania a potu may so closely simulate the mania of general paralysis that it is impossible to decide, until the patient has been kept under observation, and alcohol withheld. It may generally be said that a patient admitted to the asylum with mania a potu, in which the mania does not clear up after a month, will turn out to be a general paralytic, and it must be remembered that an early sign of this disease is often a lapse from moderation to intemperance. Thus, when admitted, he will have a history and signs of alcoholic intemperance.

In considering the diagnosis of general paralysis, it must be remembered that the great majority of cases commence in the fourth and fifth decades of life; that it is much commoner in males than females; that there are different forms of the disease; and that there are certain objective signs present. The term paralysis is incorrect, for it is a paresis; and a gross paralytic condition points away from general paralysis rather than to it. It is a progressive failure of the fine motor adjustment of the brain affecting the instruments of the mind, the speech, and the hand, by which individuals express their thoughts and emotions, rather than the coarse paralysis of limbs. This we can understand when we remember that the disease is a shedding of the highest, and latest acquired functions of the mind, the cerebral cortex; and as this process goes on, and in proportion to the destruction of the cortical elements, so there is a progessive dementia, which, of all the symptoms of the disease, is the most constant. Inasmuch as there are no coarse paralyses, as in syphilitic brain disease, there is rarely any gross pyramidal tract degeneration in the cord. Consequently, although the knee-jerks, in the majority of cases, are exaggerated, we do not obtain ankle clonus, or Babinsky's, or Oppenheim's signs. The muscles, although they may be wasted, all respond normally to electrical stimulation. In spinal cases, that is the tabic form, or cases which have begun with locomotor ataxy, and ended with general paralysis, the knee-jerks may be absent on both sides, or absent on one side and present on the other. There may be, in such cases, sensory disturbances as in tabes, and these sensory

disturbances may give rise to delusions of electricity, poisoning, etc. Again, visual hallucinations may occur, especially where there is commencing optic atrophy. In the prodromal stage of general paralysis, the only noteworthy symptoms are those which the nearest relative, the wife, members of the family, or the partner in profession or business may have noticed in the conduct of the patient. His moral and æsthetic feelings may have changed; his character, proviously cheerful and gay, may have become irritable, morose, depressed, and changeable in mood; perhaps apprehensive and filled with morbid fears and dread; or previously quiet, careful of his money, a good husband, and a good father, he becomes neglectful of his home, and wrapped up in some scheme, by which he will satisfy newly acquired ambitious designs; or there may be marked exuderance of spirits, exhilaration, and a desire to spend money; or a hyperæsthesia sexualis, with an insufficient power to satisfy his impulses, will lead to strained marital relations, immorality, and promiscuous intercourse, exhibitionism, and even sexual perversions. The moral and æsthetic feelings of the man are changed.

Sometimes the first indication may be attacks of giddiness, resembling migraine, or convulsive seizures, with or without loss of consciousness, or a temporary loss of speech, and apparently the patient subsequently presents no other signs or symptoms of the serious brain affection of which these attacks may be the herald. Seeing that neurasthenia is frequent among the very class of people that suffer from general paralysis, namely, men who are ambitious, filled with ideas and active in profession or business, men who have lived fast, or shown much mental capacity, or quickness of mental reaction, suffering from brain-fatigue, they may take alcoholic stimulants or drugs such as morphia or cocaine; such men are likely either to have had syphilis, or to have been in the way of getting it, and are therefore the very individuals who are likely to develop general paralysis.

It naturally comes to the mind of the practitioner to think of the possibility of the prodromal stage of general paralysis, when such an individual comes to him, suffering from headache, lassitude, weakness of memory, loss of power of attention or of sustained mental effort, inability to find words to express his thoughts, hesitation in speech, tremor in tongue and lips, hypochondriacal ideas, a morbid dread of softening of the brain, from which he has heard that some friend of his, with similar symptoms, has suffered. The question arises, how are we to decide whether he is in the prodromal stage of general paralysis? It may be particularly difficult to do so if the case is complicated with alcoholism or drug-habit. The knee-jerks will probably be exaggerated in any case. If the friends (and more especially the wife) are unable to state that there is any change in his character other than depression, if there is no sign of dementia, and the only mental symptom the hypochondriacal tendency, it is probable that the patient is suffering from a neurasthenia.

The examination of the pupils in such a case, may afford the most valuable objective sign. Inequality of the pupils would indicate organic brain disease, and the existence of a sluggish reaction to light, or the Argyll-Robertson pupil inactive to light while active to accommodation, would be certain evidence in favour of general paralysis. Still the pupils may not show any of these signs. Joffroy and Schramek, also Piltz, and others, have recently shown the importance of the irregular pupil in the diagnosis of early cases of tabes and general paralysis, and this irregularity or contour may precede all other signs, and points to general paralysis, tabes, or syphilis. The irregularity may be continuously or only transitorily manifest, when the light reflex is tried. The pupil, instead of being circular, is irregularly angular, and, owing to the unequal tension of the muscular structures of the iris, it may be displaced from its central position, and become more or less eccentric. Should any of these pupil anomalies be present a grave prognosis would be indicated.

Again, lumbar puncture is a most valuable means of determining whether or no a patient is suffering from functional or organic disease of the nervous system, for, if the cerebrospinal fluid withdrawn by this operation is centrifuged, and a deposit found, which, on microscopic examination, consists of lymphocytes and plasma cells, we can certainly exclude neurasthenia, hysteria, and other functional neuroses and psychoses. The existence of these cellular elements points to chronic organic disease of the central nervous system, notably tabes, general paralysis, syphilis, and tubercular meningitis. Consequently, all doubtful cases can be cleared up by this simple operation. The Wassarman-Plaut method of examining the fluid for antisyphilitic bodies may prove a most useful adjunct in skilled hands.

Dementia præcox, or the primary dementia of adolescence, could thus, and by the absence of pupillary phenomena, be distinguished from juvenile general paralysis, with which it might possibly be confused, although the initial symptoms are really not like those of general paralysis, for they frequently begin with auditory hallucinations and delusions of a fragmentary character, without any evident dementia. There may be catatonic stupor, automatic obedience, and occasionally impulsive automatism, or the patient may gradually become imbecile and demented—the hebephrenic type. This type is the most likely to be mistaken for juvenile general paralysis.

It is the primary dementia of adolescence of Clouston, but the pupil phenomena, characteristic of general paralysis, are absent in this disease, and although there is a blankness of expression, or an "air de beatitude," yet the tremors of tongue and lips are not met with. It is an extraordinary thing, and of psychological interest to note that grandiose delusions are seldom met with in the juveniie form of general paralysis. There are two types (1) in which the child is an ament from birth; (2) the other, in which until pnberty, the child may be of normal intellectual capacity, and then the degeneration process starts. The reason why juvenile general paralytics have not these grandiose delusions of wealth, ambition, and sexual vigour, is because, until puberty, these passions have not formed a part of their experiences of associative memory, whereas, in the adult, according to the character of the individual, the dominant passion of his existence may have been associated with one or more of these tendencies, and they have formed a large part of the routine habit of his thoughts and emotions. Consequently these experiences have become more deeply organised in his brain, so that, as the mind is shed by the process of decay in his brain, this passion is left uncontrolled and unantagonised, and rises accordingly into consciousness pathologically magnified. I had a striking example of this, exhibited to me in the following manner:—

A man, who had been an old-furniture dealer all his life, had the delusion that all the furniture in the asylum belonged to him and he talked nothing but furniture. He suffered from general paralysis, had a gumma of the tongue, for which half the tongue was removed on the supposition that it was an epithelioma, and he died a year later of general paralysis.

On visiting another asylum, I was shown a woman who had a tertiary syphilide on the skin, and who had delusion that all the furniture in the building belonged to her. This immediately made me think of the name of the man, who had died at Claybury, I found that it was her husband.

It is of very great importance, from a therapeutical point of view, to discriminate between the various forms of brain syphilis and general paralysis, for the one is a neuronic decay, which cannot be influenced by anti-syphilitic treatment, whereas apparently hopeless cases of true brain syphilis may be either cured, partially cured, or relieved by energetic treatment with mercury inunction and injection, and large doses of iodide. Many of these cases were generally wrongly called syphilitic general paralysis; they are quite different pathalogically. Syphilitic brain disease is a specific neoplastic formation, occuring in the lymphatic structures of the membranes, perivascular lymph spaces, and walls of the vessels, especially the arteries tending to the formation of diffuse gummatous deposits spread over the surface of the membranes, around the vessels, or forming definite tumours by extension into the substance of the brain. We may distinguish different forms, the basic, gummatous, cerebro-spinal meningitis, with which is often associated an endarteritis, and, in the severe cases, gummatous projections into the substance of the brain. Such cases usually occur within the first few years after infection, hence the patients are usually young subjects; they may suffer from headache, attacks of giddiness, transitory disturbances of consciousness, maniacal attacks, loss of memory, fits of depression and attempted suicide, and they may be found wandering at large and be taken up by the police; sometimes ptosis, or squint, with some stiffness of the neck may indicate the meningitis; usually there is no pyrexia, and this may throw one off one's guard. Transitory attacks of aphasia, monoplegia, or hemiplegia, owing to the disturbance of the circulation by endarteritis, may occur. Polydypsia, polyuria, and glycosuria may exist. Disturbances of vision are frequently met with, e.g., transitory hemianopsia, but the most common, and the most serious, symptom is affectiou of the optic nerves causing neuritis, and eventually complete blindness by involvement of the chiasma and nerves, or tract in the gummatous process. Now, in general paralysis, there is never optic neuritis, but there may occasionally be primary optic atrophy. Nor is there, as a rule, coarse paralysis, such as would be occasioned by blocking of arteries. The existence of Babinsky's sign, or ankle clonus, or the wrist tap contraction, or jaw clonus, would point to coarse brain disease rather than to primary decay. These cases of severe syphilitic brain disease, in which the mental symptoms are the most pronounced, are often spoken of as pseudo-paralysis. They should be early recognised in the course of the disease, for energetic treatment often leads to the good results. Another important sign of this disease is severe headache, worse at night, and often waking the patient up at a definite time in the early morning, also tenderness on percussion of the head, frequently in some definite spot.

Endarteritis Syphilitica.—Heubner showed that when more than two arteries, forming the circle of Willis are affected, headache, disturbances of consciousness, attacks of giddiness and convulsive seizures may supervene. Another characteristic of this disease is transitory attacks of aphasia, monoplegias, hemiplegias, word-blindness, and word-deafness, or hemianopsy lasting a few minutes, a few hours, or a few days. These attacks are easily mistaken for a seizure of general paralysis especially when associated with weakness of memory, headache, and exaggerated knee-jerks, and sometimes pupil phenomena. Sooner

or later, there occurs a coarse obtrusive paralysis, and this, in the vast majority of cases, affords a clear indication against the diagnosis of general paralysis, in fact, symptoms, pointing to transitory disturbances of the circulation, causing the above conditions in a syphilitic subject, should always lend to anti-syphilitic treatment. It is only rarely that one finds endorteritis syphilitica of sufficient intensity and extent to give rise to coarse paralysis combined with general paralysis. I have, however, seen a few such cases.

Syphilitic tumours, single or multiple, associated with a syphilitic meningo-encephalitis may lead to convulsive seizures, progressive dementia, severe headache, pupil phenomena, all of which may lead to the erroneous diagnosis of general paralysis; but such a case would be associated with optic neuritis and vomiting, owing to intra-cranial pressure; very frequently accompanied by some form of oculo-motor paralysis, such as ptosis, or squint, or internal or external opthalmoplegia Treatment in such cases, when they have advanced to this extent, is not very hopeful.

Arterio-sclerosis, occurring in a patient getting on to fifty years of age, may be associated with melancholia and delusions of prosecution. The arterio-sclerosis may be a late result of syphilis, and the possibility of general paralysis is thought of especially if the patient has had some convulsive seizures. These convulsive attacks, however, may be uræmic in origin; in such a case, examination of the urine for albumen and casts would help to make a diagnosis, which would furthermore be confirmed by evidence of cardiac hypertrophy, high-tension pulse, and examination of the fundus, revealing albuminuric retinitis, or hæmorrhages, for as I have said before, it is seldom that a general paralytic shows any changes in the fundus beyond optic atrophy, and this does not occur in more than 5 per cent. of the cases.

Cerebral tumours may occasionally be mistaken even by competent authorities for general paralysis. An instance which occurred in my own practice, and which was also seen by one of the leading alienists, and in which we both diagnosed general paralysis, illustrates this:—

A man came to the hospital with reeling gait, unequal pupils, sluggish reaction to light, no noteworthy changes observed in the discs, a history of the feeling of a tight band round his head, progressive mental weakness, defective memory strange in his manner, and having had a number of fits at intervals for some years; the speech hesitant and somewhat slurred, the knee-jerks exaggerated (especially the right), and a history of syphilis and alcoholism. Once in a good position as stage manager, he sank into a degraded condition, and neglected himself, careless of the calls of nature and of his dress and appearance, and of his associates; in fact, his whole character seemed changed. He was sent to a asylum, and the charge-attendant, after all effects of alcohol had been removed remarked that "he was a general paralytic, but he was not an ordinary one." He died, and I found, post-mortem, a slow-growing, non-vascular fibro-endothelioma, which had destroyed nearly the whole of the left frontal lobe, and a part of the right.

This tumour, no doubt, was the cause of the convulsive seizures, of the unequal pupils, and of the other symptoms from which he had suffered. The fact that it had slowly replaced the brain tissue, rather than compressed it, probably accounted for the fact that no optic neuritis was recognised, nor did he suffer from vomiting and the usual signs of cerebral tumor. Such cases, however, are very rare.

Perhaps the most difficult question of diagnosis obtained in cases of alcoholic pseudo-paralysis. I have seen such cases diagnosed as general paralysis, but post-mortem, none of the characteristic morbid appearances were found. The reason why these cases are diagnosed as general paralysis is the existence of grandiose delusions of wealth, etc., associated with tremor of the lips and tongue, and perhaps, for a time, the pupils are sluggish to light. There may be some paresis, or even paralysis of the limbs with tenderness on pressure. The grandiose delusions, however, are usually only ascertained by conversation with the patient, unlike the general paralytic, who babbles of his wealth and strength unsolicited. Moreover, there is a tendency for the delusions to pass off when alcohol is withheld.

Polyneuritic psychosis, or Korsakom's syndrome, was formerly, and is sometimes even now, confounded with general paralysis, but it is a totally distinct disease. It is really a chronic form of delirium tremens, affecting mainly women, and is brought about by the effects of a microbial toxin on a chronic alcoholic subject. The symptoms are quite characteristic; there is mental confusion, loss of memory, especially of recent events loss of orientation in time and space, illusions of personal identity, hallucinations and delusions generally of a terrifying character, or relating to marital or maternal instinct; a frequent delusion is of babies being in the bed, and of hearing the crying of babies, of burglars, thieves, and detectives. The knee-jerks are absent, or sometimes exaggerated, there is weakness in the limbs, which may go on to a complete paralysis, wrist drop, and foot doop and, if the dementia is profound, there is loss of control of the sphincter. The patient may complain of burning pains, and put insane interpretations upon them. There is tenderness on deep pressure, and not infrequent.

ly, there is a history of syphilis, or venereal disease. There may be facial paresis, ocular paresis, and sluggish-acting pupils. Such cases may terminate in a permanent dementia; but I have seen cases, in men and women, who have been admitted to the asylum with the signs of polyneuritic psychosis, which have eventually terminated in true general paralysis. A far more frequent occurrence is that a patient is admitted with acute mania a potu, but is really a general paralytic, who has taken to drinking heavily. How far are we to decide whether this is a case of alcoholism, or alcoholism in a general paralytic? An instance will show how difficult it is to do so:—

A man was admitted to the asylum, with a history of drink, and, shortly after admission, he had a series of fits; he was quite unconscious, and, for a few days after, he was the subject of delusions and hallucinations. A week later his mind was perfectly clear; he was a potential epileptic, in whom alcohol had induced a series of epileptic fits, followed by a post-epileptic psychosis, from which he recovered. Examination of his pupils, after he had recovered from the fits, revealed none of the signs, which I have previously described, and I was led to diagnose the case as not a general paralytic.

As another instance:—

A man, who had jumped of a tramway car, was admitted to Charing Cross Hospital. He was violently maniacal, theatening to shoot all those around, said he was followed, and persecuted by voices calling him opprobrious names and accusing him of crime. I saw a few days later at Hanwell; his pupils were equal, regular, and reacted to light and accommodation. I came to the conclusion that it was a case of acute alcoholic hallucinosis, and that he would recover in a short time, although he had been in an asylum not long before. A week later he was perfectly rational without hallucinations or delusions.

Another case, however, turned out quite differently:—

A man, admitted to Hanwell with a history of alcohol, had the delusion that his wife, who was dead, had been taken out of her coffin, and had gone away with another man to America that he had seen this happen, He also had a delusion that she had visited him while in the asylum. His pupils were unequal, irregular in contour, and sluggish in action to light and remained so. He subsequently developed all the typical signs of general paralysis.

Another case:—

A man was admitted to Colney Hatch Asylum in a state of acute alcoholic mania. He had hallucinations of black devils, which came and perched on his nose, and put stinking things in his nostrils; he was violent, excited, and had to be put in a padded room. A week later, when I saw him, and the effects of the alcohol had passed off, a marked euphoria had taken the place of the terrifying hallucinations. He was a king with millions, and angels now came and moistened his lips with sweet things, and put perfumes into his nostrils.

It is a remarkable fact that the hallucinations and delusions of the alcohol are usually of a terrifying character, and refer to black and grey creeping, crawling, horrible insects, rats, specters of dead persons, policemen, burglars, coffins etc.

Delusions of infidelity by the husband on the part of the wife, or the converse, are very frequent in chronic alcoholism.

In districts in which lead-poisoning is common, lead encephalitis may so closely simulate general paralysis, in many of its clinical symptoms, that some authorities consider lead a cause of this affection. Not long ago I had two brains sent to me to examine. They had been removed from patients said to have died of general paralysis caused by lead-poisoning. Of course, if fits and paralysis, accompanied by psychosis with delusions and hallucinations, are to be regarded as clinical evidence of general parlysis, then lead may be said to cause it. But for the same reason that the alcoholic polyneuritic psychosis is not general paralysis, so also is not lead-encephalitis.

Now these two brains, to my mind, showed neither the naked-eye nor the microscopic changes characteristic of general paralysis. There was a little congestion and thickening of the membranes, but no wasting of the cerebral cortex, nor granulation of the ventricles. The membranes and perivascular spaces showed some cell-infiltration, but I observed no plasma-cells. The columns of ganglion cells were not distorted; there was no cell or fibre destruction like that met with in general paralysis, the only noteworthy change of importance was a peri-nuclear chromatolysis of the large psychomotor Betz cells in the ascending frontal convolution, an indication that the patient had suffered for some long time from neuritis as it exactly resembled the change met with in the cells of alcoholic polyneuritic psychosis.

In quite 10 per cent. of the cases of general paralysis there is a history of head injury. When we consider that blows on the head will cause traumatic neurasthenia, it is not surprising that general paralysis should result.

General paresis is a primary neuronic atrophy with secondary perivascular and glia cell changes. The dementia is proportional to the destruction of the cells of the cerebral cortex. This destruction is most marked in the regions of the brain, the veins of which drain into the longitudinal sinus,

namely, the fronto-central and parietal regions, for venous stasis is more liable to take place in these parts, owing to the blood having to flow against gravity in a direction opposite to the current. The cells of the cortex are destroyed, partly by an inherent defective durability and primary decay, and partly by congestive stasis, acting upon weakened nerve elements. The proof of this is shown by the following fact :—Not infrequently, a paralytic will have a number of convulsive seizures, limited to one side of the body, and post-mortem it will be found that the hemisphere of the opposite side may weigh from 30 to 100 grammes less than the other. It may therefore be concluded that the fits were an expression of the irritation of the dying cortical cell-elements. The congestive stasis is increased by the fits, and there is a tendency to the formation of a circulus vitiosus.

The prognosis in general paralysis is bad, but occasionally remissions occur; and the fact that cures have been claimed by various methods of treatment may be due to the fact that the disease, for a time, has become quiescent, which we know frequently occurs when a patient is placed in an asylum away from the exciting influences of drink, sexual excesses, and other forms of mental excitement. It is possible that, with our better knowledge of the causation of this disease by the discovery of the spirochæta pallida and its relation to syphilis, and the successful treatment of chronic trypanosome infections new methods of treatment may be arrived at in the early stages of this fatal disease; for, of course it cannot be expected that any treatment will restore new cells to the cerebral cortex or give new life to the decadent neural elements. But, until we are better acquainted with its pathology, we cannot hope for successful treatment.

Recently, Ford Robertson has claimed to have discovered a diphtheroid organism, which he asserts is the cause of general paralysis, and he has named it Bacillus paralyticans. Moreover, he asserts that he has prepared a serum with which he claims to have produced beneficial effects. Hitherto his results have not been confirmed on the continent or in this country.—The Practitioner.

ALBUMINURIA AND UROTROPINE.

By Dr. Langheld.

A number of eminent investigators have shown that there is a connection between Urotropine medication and the appearance of albuminuria. A satisfactory explanation of this fact, however, seemed to be lacking, although I have studied the literature of the last twenty years. For this reason I felt justified in making trials which are characterized from the following general points of view:—

The discoveries made during the last fifty years in medicine have shed such light that the majority of us living at the present time, fascinated as we are by their etiological value, have allowed the basis of all knowledge of natural history, viz., biogenesis, to recede too far in the background; and yet the whole of the new bacteriology forms only a small part of the older, inexhaustible biology.

With reference to this subject we have to distinguish between (1) Pronephros (head kidney of Balfour and Sedgewick), (2) Mesonephros (primordial kidney), (3) Metanephros.

This fact by itself might prove that the essential function of the kidneys consists in what I should like to call "nervose Betriebsleitung" (nerve management), a view which is strengthened by the existing intimate connection (even identity) between them and sexual organs.

On the strength of this conclusion, which will be clear to all who are conversant with the literature, it occurred to me that as a manifestation of such "nerve management" there has to be regarded the secretion (not filtration) of the urine which secretion is a stimulation due to the secretory fibres which belong to the sympathetic nervous system.

The theory of filtration, recently discussed again in the Med. Klinik No. 40, et seq., was not clear to me, for the reason that, in respect of the re-absorption, as averred by the author of the paper, quantities are given which are impossible for the kidneys and the circulation. On the other hand, however, one would be neglectful of all biological speculation it an endeavour were made to compromise with regard to so complicated a process—a process which cannot be made to harmonize with the supreme law of every doctrine of evolution, viz., the "lex parsimoniæ."

I find it, furthermore, impossible, in the case of the various forms of albuminuria (taken collectively), to regard as primary cause the intoxication of the membranes (glomeruli, &c.). For unless one were to discard the whole cellular pathology, such an intoxication would give rise to overproduction locally, i.e., ultimately to a tumor. The functional capacity of an organ depends on its vitality, which, in its turn, is dependent on its innervation being intact. In my opinion, every form of albuminuria is au fond physiclogical; it becomes pathological (characterized according to an ascertained primary cause which may disappear, or to a fatal ending through complications or sequelæ' or to constant but harmless influence on the organism) if it is only conditional on a degenerated nerve function.

But "exempla docent."

The ordinary daily dose of Urotropine, according to Penzoldt, is 1·5 to 2 grms., administered half in the morning and half in the evening; according to Zeimssen, the dose should cover a three penny piece, to be taken on an empty stomach in the morning, and if required, again in the evening. Both authors mention water as the dissolving medium. These doses may be, or are to be (Penzoldt), administered for months, or even for years. Other authors, however, have ascertained that occasionally the use even of doses as aforesaid is followed by the appearance of albuminuria, which "disappears when the employment of the remedy is discontinued."

The first questions to be answered, therefore, were:—

(I.) When (i.e., after which dose) does albuminuria appear after the use of Urotropine? (II.) Why does it appear? (III.) How does Urotropine act in the case of already existing albuminuria.?

TRIALS—SERIES A.

Case I.—A man in good health, thirty-eight years of age. History was free from abnormal features. He was not given to drink, did not smoke to excess, occupation healthy. Urine was normal. Treatment: In the morning he was given, on an empty stomach, 6 grms. of Urotropine dissolved in 250 grms. of ordinary drinking water at room temperature. In the evening the same quantity was taken, Result (the object of the trial had been explained to him): He became somewhat restless through expectation, after taking the first quantity; but after the lapse of about an hour he ate with a good appetite. After about an hour and a half he felt pronounced strangury, recurring every thirty minutes. The quantity of the urine, passed after four hours, amounted to about 1,200 grms.; the quantity of liquid consumed during that time was 300 grms., in the form of coffee with milk. No burning in the bladder was felt. The urine smelt strongly of garlic; its specific gravity had diminished; it was of a lighter colour than usual, and clear. The esbach test gave no reaction. The mid-day and evening meals consisted of a mixed diet. The quantity of liquid taken was about 300 grms. In the evening 6 grms. of Urotropine dissolved in 250 grms. of water were given. The patient got out of bed three times during the night; he felt a slight burning in the bladder, and before morning passed about 2,000 grms. of urine, which likewise smelt strongly of garlic, but showed no trace of albumin. There existed general euphory. The pulse was normal The burning in the bladder disappeared after the consumption of two bottles of soda water.

Case II.—A man, forty years of age. Anamnesis: His father had formerly been an alcoholic. The patient himself had had measles and severe diphtheria (when about twelve years of age). He had successfully been vaccinated three times. He admitted occasional excesses. The urine was normal. Treatment: The patient, who was acquainted with the object of the trial, was given for eight days running, in the morning, on an empty stomach, 10 grms. of Urotropine in 1,000 grms. of water, which was sipped within half an hour. Result: The diuresis increased considerably; on the second day burning in the bladder was felt, but disappeared after the consumption of soda water. The urine was found to be free from albumen (Esbach). His appetite and general health were normal.

Case III.—A man, twenty-five years of age, suffering from acute gonorrhœa, was given for twelve days running, in the morning before breakfast, 5 grms. of Urotropine in 500 grms. of water. He was kept in bed, and after five hours light soft diet was given. He passed copious quantities of urine, which up to the third hour smelt strongly of garlic, but did not smell in the afternoon. After the sixth day the discharge had almost disappeared. On the thirteenth day the urine was found to be free from albumen. Up to mid-day the quantity of urine was about 1,800 grms., for the remainder of the day about 2,000 grms. (in eighteen hours). The patient was directed to apply local irrigations with Urotropine 1 : 100 four times daily, and to take daily, in the morning, 3 grms (6 tablets) of Urotropine in 250 grms. of water. After another three weeks the patient called at mid-day, bringing with him the urine (about 900 grms.) passed in the forencon; it was free from albumen. No trace of gonorrhœa was observed. No relapse occurred after an evening carousal.

Four other patients, whose anamnesis was favourable, were given on an average, for a period of from ten to fifteen days, in the morning, on an empty stomach, 5 grms. of Urotropine. Albumen was never observed. In two instances burning in the bladder was felt; it disappeared, however, after the consumption of soda water. The diuresis was always increased The general health was good.

TRIALS.—SERIES B.

Case I.—A gentleman, forty-six years of age, a pronounced neurasthenic, always suffering in the spring and autumn from bronchitis accompanied by rheumatism. Anamnesis: His father died of apoplexy, his mother of uterine cancer. He had had measles, scarlet fever, and gonorrhœa; the latter continued for years. His first attack of articular rheumatism took place about ten years ago. The gonorrhœa was said to have disappeared about sixteen years ago. The patient had

been married twelve years; no children; his wife was in good health. Present state: There exist strictures, vitium cordis, said to be caused by overdoses of salicylic preparations. Tophi on both hands; the third and fourth fingers on both hands are only partially movable. The urine cloudy, distinctly acid; specific gravity 48·01, uric acid 0·58, urea 4·9; no albumen, no sugar. The microscopic examination showed kidney and bladder epithelia, few leucocytes, many oxalic acid and uric acid crystals. Treatment: The patient was given in the morning, on an empty stomach, 0·5 grm of Urotropine dissolved in a claretglassful of soda water. Light diet. In order to be able to supervise the patient he was ordered to keep to his bed, and during a week no other medicament was administered. The urine collected contained on the third day traces, on the fifth day 0·02 per cent. of albumen, which quantity remained constant during the next fourteen days, and disappeared permanently four days after the Urotropine medication was discontinued. The patient underwent typical treatment; nevertheless, he again had an attack of rheumatism in October, and, as the urine became turbid, he took Urotropine. The administration of the same dose was followed on the fourth day, when the urine was examined, by the appearance of 0·03 per cent. of albumen.

Case II.—An epileptic lady, thirty-one years of age, virgo. Her mother was neurotic, her father given to drink, a brother was an imbecile, a sister highly hysterical. She had been for a long time under treatment in a home. Her history disclosed the presence of albumen after the attacks. These occurred usually during the menses, and were especially violent during ovulation; they numbered about eight to ten in twenty-four hours. The patient had met with many accidents. When suffering from an attack of influenza she passed turbid, acid, and dark urine, with an offensive odour; quantity, 400 grms per day. Diuresis was brought about with milk and soda water, and in the morning 1 grm. of Urotropine in 250 grms. of soda water was given. After two days, with copious diuresis and pronounced diaphoresis, about 0·01 per cent. of albumen appeared, which continued during Urotropine medication and permanently disappeared three or four days afterwards.

Case III.—A gentleman, fifty-four years of age, suffering from neurasthenia and depression. Anamnesis: The patient was the offspring of cousins germam. He was of slender build. In his youth he was always ailing. As signs of degeneration were noticed prominent ears and the shape of the skull, also very bad teeth and scoliosis. All his brothers and sisters were said to be in good health, although highly "nervous" and "somewhat eccentric." Three of his brothers and sisters died of "convulsions due to teething." The patient, who was a total abstainer, took considerable quantities of tea and coffee and smoked about twenty-five to thirty strong cigarettes a day. He stated most positively that he did not take opium or morphia. About thirty years ago he had gonorrhœa. The patient had been married about twenty years, and had two "healthy" children, who, on closer examination, however, proved to be chlorotic, highly hysterical and scoliotic, and had lost almost all their teeth The state of nutrition was moderate; enteroptic habitus; the heart, lungs, and liver were too small, the lungs (the apex of the left) affected by a slight catarrh. The pulse was irregular (nicotine, coffee). Chronic constipation. Increased patellar reflex. The patient gave an exact description of all subjective symptoms of tabes. He worked out a list of his ailments, giving reasons thereof; and he had about twelve analysis of urine available, as he was apprehensive of diabetes mellitus. He regularly went to Wiesbaden, Nauheim, and Wildungen. The urine, brought by him (together with an analysis made on the same day) was without importance as regards kidney symptoms; it was thick and turbid, and to clarify it 0·5 grm. of Urotropine in soda water was taken in the morning. He was kept in bed and put on light but nourishing diet. When finding, on the second day, the urine to be clear, the patient felt much better and was amenable to mental influence. An examination of the urine was made privately at the end of the week and disclosed distinct traces of albumen; casts were also observed. After discontinuing the use of Urotropine the albumen disappeared. The patient was stil kept in bed and urotropine was again administered, whereupon the albumen immediately reappeared. His general health was improved, the appetite good. The patient had increased six pounds in weight.

Case IV.—A woman, thirty-four years of age. Anamnesis: Her parents and four brothers and sisters died of tuberculosis, five were living. The patient was always weak and anæmic, and often subject to migraine. When the menses first set in, at the age of seventeen and a quarter, she was highly hysterical. In chidhood she suffered from chronic bronchitis, constant colds, pronounced bleeding from nose, inflammation of the ear, and measles. She married when twenty-four, and after three miscarriages in the third to fourth month, she had two children who were said to be healthy (her husband, when asked privately, indignantly disclaimed the idea of having had syphilis). The patient was very musical, but always restless; amongst her friends she was looked upon as a good-natured but whimsical person. She was of slender build, very anaemic, with the usual sequelæ and concomitant phenomena She had "convulsions in the hands, legs, a globe in the throat"—in

short, she was highly hysterical. Objectively, fluor albus, irregular pulse, foul tongue. She eructated loudly at will, and during the examination of the lungs (double-sided bronchitis) she had a yawning fit which ended in laughter. The urine, the daily quantity of which was said to amount to two litres, was turbid, cloudy, with a red-brown sediment, slimy, and contained quantities of pus and epithelia. In filtered urine no albumen was observed. With a view of combating the restlessness (a stay in a home being contemplated), the patient was kept in bed and given an effervescent bromide; and on the second day, on an empty stomach, 0·5 grm. of Urotropine in a wineglassful of soda water was administered in order to exert an influence on the uropoietic system. On the third day the urine (catheter-drawn by a nurse) was clear, but there were distinct traces of albumen. After discontinuing the use of Urotropine the albumen disappeared.

There are about twenty other similar cases, in all of which hereditary taint, alcoholism, articular rheumatism, scarlet fever, and gonorrhœa come into question as factors in the history. The etiology of the actual disease, however, was almost without any connection with the anamnesis, and, as a rule, simple.

TRIALS.—SERIES C.

Case I.—A man, fifty years of age, suffering from diabetes mellitus (5·39 per cent.), albumen 0·02 per cent. The diabetes existed about ten years (Carlsbad, Neuenahr), fluctuating between 0·3 and 0·8 per cent. immediately after a cure. The minimum amount of albumen was 0·09 per cent. After treatment for four weeks with a mineral water containing sodium chloride, 1 grm. of Urotropine being added to 750 grms. of such water, the urine remained permanently free from albumen.

Case II.—A gentleman, about sixty years of age, suffering from gouty kidneys. During the attack the amount of albumen was 0·9 per cent.; generally it was about 0·05 per cent. The patient was given in the morning 750 grms. of mineral water (containing sodium chloride), to which 1·5 grm. of Urotropine was added, the consumption of the quantity to take half an hour. After three weeks only traces of albumen were observed and after two months no albumen at all was seen. Mention must be made especially of the fact that the patient was in the habit of drinking the mineral water in question for the last twenty years—without the addition of Urotropine of course.

Case III.—A lady with incipient Bright's disease. There was œdema of the eyes and the ankles. A floating kidney on the right; slight anæmia. Anamnesis: Measles, chicken-pox. Her father died of cancer of the stomach, her mother of consumption. The children were healthy. Amount of albumen, 0·04 per cent. Treatment: Diet; plenty of milk. In the morning, before breakfast, 500 grms. of mineral water (containing sodium chloride), to which 1 grm. of Urotropine was added. After three weeks the amount of albumen was 0·01 per cent. After another four weeks there was no trace of albumen. This state—the administration of Urotropine, viz. 0·5 grm. in 250 grms. of water—being continued, lasted for about three months. Then followed a period of about four months during which the patient stayed in the South without taking any medicament. On her return she was free from complaint; no œdema or albumen. The patient then caught a cold (severe influenza). On the fourth day of the illness blood, pus (red and white blood corpuscles), casts, &c. The amount of albumen was 1·2 per cent. The quantity of urine was 320 grms. per twenty-four hours. Pronounced œdema. Diet; plenty of milk. Digitalis and profuse diaphoresis, and in the morning 1 grm. of Urotropine in 250 grms. of water was ordered. After fourteen days all alarming symptoms decreased. The amount of albumen was 0·014 per cent.

Case IV.—A workman, thirty-six years of age, who had refused to undergo an operation (tuberculosis of the kidney). From his history it appeared that he was an alcoholic degenerate, and syphilis did dot seem to be out of the question. There was 0·6 per cent. of albumen. His state and future were clearly explained to him; he would however, try Urotropine. In eight weeks there were fluctuations in the amount of albumen, its minimum being 0·03 per cent., its maximum 0·48 per cent. Diet. In the morning daily 1·5 grm. of Urotropine in 300 grms. of water. The patient felt comparatively well, and withdrew from further observation.

To the first question. When does albuminuria appear after the use of Urotropine? I would answer as follows:—

(1) As to the dose, 0·5 grm. per day is sufficient.

(2) As to time, the minimum might be from two to three

We now pass to the second question. Why does albuminuria appear after the use of Urotropine?

With regard to answering this question I am well aware of the difficulty I have to surmount, all the more so because of the limited scope of this essay, which necessarily affects the description of the cases quoted. However, later on will be published a series of trials and observations of at least 100 cases, on the basis of which I trust critics will arrive at my conclusions, viz.

(1) Urotropine, even if given in very large doses, does not cause an excretion of albumen if the person experimented on is healthy, i.e., if there exists no hereditary taint, viz, degeneration, or no acquired weakness (see Series A)

On the other hand, (2) the use of small doses of Urotropine is followed by the appearance of albuminuria if any one or both hypotheses of No. 1 do not hold good; and the cause, as shown by the briefly described cases of Series B, always is some neurotic degeneration—in the region of the sympathetic nerves. The cause (the lacking capacity of the normal "nerve management"—see introductory remarks) may be three-fold, viz., either (a) the existing regulating factors (sympathetic nerves) perform their function at intervals, but fail to do so in the case of any increased irritation (convulsive attacks); or (b) the neurotic function has at some previous time been affected and regenerated only so far that even a very slight new insultus is sufficient to cause it to fail (see Cases I. and III., Series B.); or (c) an interruption in the function does not exist as far as demonstration goes (as under a), nor has there occurred any insultus (intoxication, which presumably may have to be regarded as partial or total paralysis) in the region of the renal function (see b); there exists, however, a general disturbance in the nutrition and function of the nerves (too much or too little, too strong or too weak) which needs but a slight additional burden (through Urotropine) to make its appearance.

Assuming the aforesaid remarks to be convincing, we are confronted by the questions, Which characteristic in Urotropine gives rise to albuminuria? and at which place in the organism does its action set in? and, finally, which are the kinds of albumen excreted?

Neither the blood passage nor the central nerve termination comes into question, were it but for the reason that when working with formaldehyde and its compounds during a number of years for several hours daily, there never—irrespective of transitory phenomena of irritation in the region of the respiratory passages and the eyes—occurs albumen, and because, moreover, in the event of albumen appearing at all when formaldehyde compounds are passed into the vein, the anamnesis furnishes an explanation. Such a central disturbance or change of the condition of the blood would never be unaccompanied by severe phenomena which certainly might not disappear so promptly and uninfluentially.

It only remains to assume that within the kidneys themselves there are sympathetic nerve fibres (secretory fibres) which, under the above mentioned hypotheses of morbidity, would be affected by passing formaldehyde (be it ever so diluted (to such an extent that they either contract or harden, and thus allow the albumen to pass or to form. I would mention here that researches are now being made regarding the influence exerted by solutions of formaldehyde on the cell, and that, as far as I am able to see at present, it may be possible to show that the vegetable as well as the animal cell is found in a form similar to alcoholic influence, and reacts in both experimental series in a similar manner.

The kind of the excreted albumen had all the characteristics of the albumen and globulin of the plasma.

Closely connected with these considerations is the third question, How does Urotropine act in the case of existing albuminuria, and why does it do so.

The experimental Series C shows in the aforesaid cases (which are but partially and imperfectly described) the decrease and disappearance respectively of the secretion of albumen. In the selected Cases I. and II. of the series gout is etiologically the basis. The influence exerted by formaldehyde thereon has already been established by His, hence it need not be discussed here. Rather more difficult is Case III. and similar cases. One might attempt, perhaps, to give an explanation of this obscure process as follows:—

Should a toxic substance which the organism is endeavouring to excrete get into one or both of the organs in question, the possibility of toxication will be greatest at that spot where the rapidity of the movement is diminished and the connecting substances (membranes, nerve fibres, &c.) are the finest or weakest. The toxic action may consist in an irritating (inflammatory) process, which, if permanent, causes either proliferation or paralysis, and, with that, necrosis. The final result of such forms of action I consider to be the large white or spotted or the so-called contracted kidney.

Now, if at the commencement of the inflammation there takes place permanently a uniform disinfection by formaldehyde (hardening, contraction), which simultaneously renders harmless (dissolves or binds) the still existing causes of the toxication (i.e., the toxic substances themselves), the membrane the nerve termination, is given an opportunity of doing away with the necrosed substance, i.e., of completely resuming its function. The albumen in the urine, therefore, will disappear. But if the toxigensis exists in an organ in such a manner that only a new insultus (influenza, for example) is needed for it to give rise to functions with a toxic action, and if at the respective moment the blood has not been freed from poison, a toxication (inflammation) naturally must again take place at the old spot of the kidney—the "locus minoris resistentiæ"—and, as a consequence, albumen must appear. Here I would refer

readers to Case III. of the experimental Series C. should, however, in the course of the toxic action a contraction have taken place, i.e., should the existing membranes or nerve fibres already be necrosed to such an extent that the loss in substance is past making up, there can be no question of getting rid of the poison as long as there are scars, which as signs of their living walls part with cell wall substances, i.e, small quantities of albumen, to the stream which irrigates them.

Having now come to the end of this essay, I would yet mention the following :—

The albumen-diminishing influence of Urotropine I have observed in so many cases that it seems to me to be established beyond doubt.

I may not have succeeded in making clear the reason why more especially so as there might be raised the objection that the sacretory (nerve fibres mentioned (supposed) by me have not yet been seen. To such an objection I may be permitted to reply that in medicine a great number of processes are still unrevealed as regards their evolution (course), but are clear as far as the result is concerned, and that a denial of the occurring of a process cannot be based simply on saying that it has not been or is not seen, but only by proving that such secretory fibrous do not exist; and only in the event of such proof being brought I could look upon the foregoing views, crudely stated, as being erroneous.

On the other hand, however, I would not go so far as to attribute as yet a diagnostically valuable character to Urotropine. I am sure that long observation will lead to according to Urotropine a decisive position in case of obscure etiology and lacking anamnesis, But to that end a far more extensive collection of illustrative cases than are available at present is required.

One may say, however, that in Urotropine we posses a valuable preparation that shows a certain uniformity in its frequently differing effects, a uniformity due to the constancy of manufacture.—THE THERAPIST.

SOME REMARKS ON ASCITES, ASSOCIATED WITH HEPATIC CIRRHOSIS, WITH NOTES OF A CASE SUCCESSFULLY TREATED BY THE OPERATION OF OMENTOPEXY.

BY ARTHUR D. KETCHEN, M.B.

In recent years, the treatment of ascites, due to hepatic cirrhosis, by surgical operations, has become recognised as a procedure, which is usually followed by more beneficial results than the older method of oft repeated tappings. It is well, however, that this surgical treatment should not be employed indiscriminately, and that, in order that it may not come into disrepute, only those cases of ascites, which are suitable, should be so treated. It may not be out of place, therefore, to first inquire into the pathological causes of such ascites, with a view to determining in what cases this surgical procedure is indicated. Ascites has been defined as "an accumulation of fluid within the cavity of the peritoneum." It is, of course, only a symptom, and occurs in many different diseases.

Clinically, two well-defined classes of cases may be recognised, in which ascites is associated with cirrhosis of the liver.

In the first class, the presence of free fluid in the abdominal cavity is an early sign, showing itself at a stage when there are not many symptoms of a general systemic poisoning. These cases, being tapped, stand well, and show improvement after such treatment.

In the second class of case, the ascites is present at the late stages, when the general systemic disturbance is well marked. If these cases are tapped and the fluid withdrawn, death frequently occurs, as Hale White has shown, before a second tapping becomes necessary. There are many cases intermediate between these two classes. In these two clinical types of cases, the cause of the ascites was, for many years, attributed solely to the obstruction of the portal circulation, consequent on the narrowing of the portal vein by the contraction of the new formed connective tissue in the liver, and the ensuing rise in blood pressure in the tributaries of this vein resulted, it was supposed, in a transudation of lymph through the capillaries into the peritoneal cavity. Of late years, many facts have been brought to light, which mitigate against the view that this is the sole cause of the acumulation of fluid in the peritoneal cavity. The facts are:—(1) that in animals, the portal vein has been ligatured by Starling and others, without causing ascites, and (2) that, in thrombosis of that vessel, immediate effusion into the peritoneal cavity does not take place. (3) Further, in atrophic cirrhosis, considerable pressure on the portal vein exists before ascites supervenes, this symptom, as has just been mentioned, being sometimes a late one in the course of the disease. We are forced, therefore, to look for some other main contributing cause, and most authorities consider that this is an inflammatory condition of the peritoneum itself, for, if the transudation from the blood vessels, following on increased blood pressure and consequent injury to the vessel wall, was the principal factor, the natural course of such effusion would, as Allchin has pointed out, be into the lumen of the stomach and bowels, and not into the peritoneal cavity, because "it is on the mucous rather

than on the peritoneal surface that the chief engorgement of the capillaries takes place, as is evident by the anatomical distribution of the vessels, and as is shown by the hæmorrhages which take place from the mucous membrane in such conditions."

Having come to the conclusion that the exuded fluid, in both clinical types, is due to peritonitis, the next point of interest is the possible explanation of the clinical varieties. That which seems to account, in the most satisfactory way, for the clinical phenomena, is that, in the first class, the peritonitis is an entirely local condition, running coincidently with the changes in the liver, but not dependent on them, the same poison, which produces the slow inflammatory process in the liver, acting also locally on the peritoneum. The liver, in these cases, is therefore still, as regards its functions, active, the morbid changes in the organ not having proceeded far enough to seriously impair its functional role in the metabolism of the body. Drainage of the peritoneum, in these cases, relieves a local condition, the inflamed peritoneal surface come together, and the peritoneal cavity becomes more or less obliterated by adhesions. If the poison, which the patient has taken, and which is the exciting cause of all the morbid processes, is withdrawn, the disease may remain stationary, and the patient lead a healthy life for years.

In the second class of case, there is also peritonitis, but this is toxæmic in origin, the destructive changes in the liver cells having proceeded to such a degree that they are no longer able to exercise their normal functions, and, as a result, poisons, which are usually eliminated, find their way into the general system, causing inflammatory changes in many organs; the peritoneum, kidneys, liver, heart, all showing marked evidence of functional and organic changes.

In these latter cases, removal of the ascitic fluid is in no way beneficial, and would not delay the fatal termination of the disease, the ascites, being a symptom of a general poisoning, not a local one, is more analogous to the effusion into the pleural, or pericardial, cavities, which occurs in the last stages of uræmic poisoning.

In the intermediate cases, both causes of peritonitis may be present, first the local and then the toxæmic.

It will be clear from the above that operative procedure may produce great amelioration of the symptoms in the first class of case whilst being useless in the second, and of problematical value in some of the intermediate cases.

The next point for consideration is what clinical symptoms are present, from which the underlying pathological condition may be induced, and so give the necessary indications for operations or otherwise. One of the first and most important is the result of tapping. If the patient is tapped several times successfully, his general condition remaining good, it is very likely that an omentopexy will be beneficial. If, in addition, there are no evidences of kidney changes, if there is no general swelling, and the enlargement of the abdomen preceded nay swelling of the legs, the outlook is also favourable. On the other hand, the presence of marked mitral disease, albumen in the urine, which is constant and not intermittent, and does not disappear on the temporary relief of pressure following paracentesis, changes in the lungs (often tuberculous) the swelling of the legs, preceding swelling of the abdomen, and a progressive deterioration of the general condition, notwithstanding the paracentesis, all these contra-indicate operation as likely to afford much relief. The way in which the operation gives relief is difficult of explanation. It is well known that laparotomy and drainage give good results in such chronic peritoneal conditions as tuberculosis. It has been suggested that the relief takes place by more or less obliteration of the peritoneal cavity, more than by the establishment of fresh channels of collateral circulation, and, in the case noted below, the number of adhesions between the liver and abdominal wall, which already contained large veins, was very noticeable, and yet, notwithstanding this, the quantity of ascitic fluid was large. Further, if the disappearance of the ascitic fluid is mainly caused by the establishment of fresh channels between the portal veins and the systemic veins, this could hardly be looked upon as a very desirable condition, because, as is well known, the portal vein contains many poisons derived from the absorption by its radicals of substances in the alimentary canal, and these poisons would then be circulated directly throughout the system, without being first eliminated from the blood by that most important toxin filter, the liver. Experiment has shown that, in animals, if a direct anastomosis is made between the portal vein and vena cava, the animal rapidly dies on account of the circulation of such poisons. There can be little doubt, however, that this operation is also very beneficial through the increased supply of arterial blood, which the surface of the liver receives by the formation of these vascular adhesions between its peritoneal surface and the abdominal wall, such arterial supply tending to nourish and maintain the utility of many of the liver cells near the surface, the blood supply of which, from the hepatic artery, would be greatly diminished by the contracting new connective tissue.

The following are the notes of the cases:—John Carries, a Greek, occupation, shoeblack. At 45, was admitted to St. Leger ward, New Somerset Hospital Cape Town, on June 20,

1906. Previous history gave no account of any illnesses. There was, however, a history of alcoholism, gin being the drink by preference. History of present illness was that, 14 days ago, patient noticed some swelling of the abdomen, this was accompanied by epigastric pain and diarrhœa, but there was no vomiting or hæmatemesis.

Condition on Admission.—Breathing somewhat hurried, but there was no acute distress, patient being fairly comfortable.

Abdomen was fairly distended, and contained free fluid, the liver and spleen were considerably enlarged.

The heart sounds somewhat feeble bur quite clear at apex. A soft systolic murmur was audible over the aortic cartilage. Apex beat in the nipple line. No mitral or other murmurs present. The aortic systolic murmur was attributed to atheroma of aortic origin, there being no evidences of aortic stenosis.

Examination of the lungs showed a diminished respiratory murmur at both bases with a few moist sounds. Prolonged expiration was present at both apices, in front and behind, but no adventitious sounds present. Albumen was present in the urine, but there was no sugar, specific gravity 1020, reaction acid. The quantity passed in the 24 hours varied from 20 to 40 ounces.

There was no swelling of the feet or generalised œdema.

The patient remained in hospital for three weeks, during which time he was tapped once. He left the hospital, July 10 at his own request, his general condition being good, but was re-admitted September 14, 1906, having been tapped twice in the meantime when outside. His condition on re-admission was much the same as when he first entered the hospital, only now, in addition to the ascites, he had swelling of his feet and legs, and physical signs of œdema at the bases of both lungs.

From September 14, 1906, to January 30, 1907, he was tapped 23 times, 294 pints of fluid being removed altogether After some of the tappings, the albumen would disappear from the urine for a short time, and the swelling of the legs and feet temporarily diminish, only to increase again, as the fluid once more collected in the abdomen.

The fluid drawn off nearly always presented the same characters, the specific gravity being about 1007. The reaction was alkaline, and on boiling it, it was found to contain a large quantity of albumen.

The patient's general condition continued good, and, as after every tapping fresh fluid quickly accumulated, it was decided to try what amelioration of his symptoms would follow the operation of omentopexy. The intermittent character of the albuminuria, suggested as a cause possible pressure on the venous renal circulation, rather than advanced organic kidney changes; the freedom from mitral disease, the absence of jaundice, and, further, the swelling of the legs being subsequent to the swelling of the abdomen, all these were indications that the case promised a hopeful result from operation.

The operation was performed on January 30, 1907, by Dr. Thomson, and was as follows:—

The abdomen being opened a little to the left of the middle line as far as the umbilicus, the omentum was found to have acquired from cohesions, with much enlarged veins, to the anterior abdominal wall below the umbilicus, due no doubt to previous tappings.

The large accumulation of fluid having been withdrawn, the peritoneum, covering the superior surface of the liver and adjacent inferior surface of the diaphragm, was freshened by friction with gauge, and approximated by a few interrupted gut sutures along the anterior border of the liver. The parietal peritoneum, extending from the liver above to the omental adhesions below the umbilicus, was reflected in either side from the anterior abdominal wall about four inches outwards, and sutured in position, and, to the denuded surface, the omentum was attached by numerous catgut sutures, and the abdomen closed. An opening was made above the pubes sufficient to admit a large drainage tube deep into the pelvis. Considering his condition, the patient stood the operation well.

"The abdomen drained freely for a few days, after which, fluid having ceased to drain, the tube was removed. There was, however, a slight reaccumulation of fluid in the abdomen and, on February 14, two weeks after operation, 2½ pints were drawn off by tapping, and, again on February 20, 9½ ounces Since then the patient has not been tapped."

A week after the operation, a hard swelling was felt in the left iliac fossa, which gradually extended until it reached nearly to the costal margin and forward towards the middle line. This slowly disappeared, and was probably inflammatory in nature. For a short time, there was also some constipation which was readily overcome by the use of purgatives.

The patient was dismissed on the 2nd of May 1907 his condition in every way being very satisfactory. The urine occasionally showed a slight trace of albumen. He had, however, gained in weight. The superficial abdominal veins were in no way more evident than prior to the operation. The aortic systolic murmur had disappeared.—THE PRACTITIONER.

A Mirror of Practice.

SOME OBSERVATIONS ON DIAGNOSIS AND TREATMENT OF WHOOPING COUGH.

Dr G. T. Grinnan says of the various preparations to be inhaled creosote is the best. The drug may be used in respirator or vaposized over an alcohol lamp. Carbolic acid and cresoline are also inhaled in the same manner. Of the drugs given internally about 40 per cent. of those in our materia-medica are in use. As pointed out by Holt the four drugs from which greatest benefit has been derived are antipyrine, quinine, belladonna and bromoform. Of these four probably antipyrine heads the list. A child six months old can take one grain of antipyrine every six hours. The drug can be given in relatively large doses. In cases of pneumonia antipyrine should be discontinued. A combination of antipyrine and digitalis does very well. Bromide of soda is often used with antipyrine, Quinine is not to be used for very young infants, as it is apt to disturb the stomach. Twelve or fifteen grains are to be given daily. It is an excellent remedy for those who can take it. Belladonna has been largely used, and with a marked degree of success. In using belladonna begin with small doses and increase both the size and frequency of the dose. To an infant eighteen months old one-fourth of a minim of the fluid extract may be given every four hours. If atropine is used gr. 1-800 may be used in the same way. Some authors regard belladonna as the best drug for the treatment of pertussis. Bromoform has marked value but must be used with caution. When used bromoform may be given in an emulsion, or probably a better method is to drop it on sugar. The dose at two years is from one to three drops from three to five times a day. When giving bromoform in emulsion a shake label should always be put on the bottle. Chloroform may be used to ward off convulsions or to prevent asphyxia. Intubation tubes have done good service in some cases; the rubber tube is the most popular. Vaccination and diphtheria serum are of doubtful utility. Dr. Anders of Philadelphia recommends a mosquito net to prevent draughts. It may be safely said that no internal medication shortens the attack but it does diminish the number and severity of the paroxysms. Some three or four years ago Dr. T. W. Kilmer of New York introduced quite a novel mechanical appliance for the prevention of the spasm and cough in pertussis in the form of an abdominal belt. In infants a belt four or five inches wide (children five to eight inches wide) is fastened around the abdomen. A slight degree of constriction is sufficient to produce moderation of the cough. Dr. Kilmer says that 95 per cent. of those cases who used the belt were benefited not only in regard to cough and paroxysm, but especially in regard to vomiting.

Annotations.

THE JEWS IN MEDICINE.

The seemingly remarkable fact that during the Dark Ages the Jews were almost the only physicians is not so surprising when we consider that the study of medicine in the twelfth century in Spain belonged to the curriculum of the ordinary course of study among all those Jews who made a pretence to belong to the educated classes. To know the laws of health was considered among the Jews, and only amongst them, of the same importance as is nowadays the knowledge of the three R's.

No wonder that most of the rabbis were physicians, and, vice versa, that physicians were rabbis. The Jew far excelled the Arab or Moor in this branch, for the Arab was prohibited by his religion, Islamism, from the dissection of man or beast which fact naturally was a check to the science of medicine. The Church held medical science an accursed science, and looked upon physicians as upon atheists. Prayers, masses, intercessions, relics of saints, and bones of martyrs were considered by the Church the only legitimate cures of all the ills that human flesh is heir to. Mr. Dowie, who claimed to be the second Elijah—although Elijah was poor and honest, and according to Biblical accounts had to wait for ravens to get enough in order to be saved from actual starvation—could find all the arguments for his "creed" in the doctrines of the Church during the Dark Ages.

For ages it was considered wicked to make any natural study of the human frame after its death. Is it any wonder that it was so long before the circulation of the blood was discovered when we bear in mind that it was the Church that placed her ban upon every man who dared to investigate in this direction? It is only a little while ago that they were having processions with banners and prayers in Naples, and likewise in Montreal, as a means of driving out the plague and pestilence, while, at the same time, they were neglecting every rudiment of sanitary science instead of finding out and obeying the natural laws of health. Yellow fever in Cuba would never have been so frequent and fatal had it not been for the fact that the powerful Church there opposed sanitation.

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The Indian Lancet.

CALCUTTA : MONDAY FEB. 3rd, 1908.

THE INDIAN MEDICAL SERVICE—AN ANAMOLY.

As to why our District Medical Officers and all the higher prize appointments in the Medical Department of the Indian Government be manned by the I.M.S. men remains to us a riddle and paradox.

They carry military ranks to their names and the military authorities are for a good long while generously lending these men to fill up the coveted civil appointments. Why this genorosity? It is because these men are above the average medical graduate, except perhaps a few months so-called training in the art and science of war at Netley? We do not think so. First of all, we deem it unnecessary that outside recruitment should take place for most of the posts. The medical graduates of the different Indian Universities, who know more of tropical maladies and the specialities in carrying out treatment in this country should be selected by a competitive test. Perhaps in a few cases only British graduates with high academical distinctions may be sent out from time to time.

It is a sheer waste of public money especially in a poor country to pay these expensive I.M.S men; when the same work can be done at a cheaper rate. We cannot fathom the unscrutable wisdom of our Govt. in appointing I.M.S. men to be chemical analysers, and medical college teachers.

Sometimes, we find a Capt. or Major I.M.S in a civil charge, within a few months if favoured by good-luck, a Professor in anatomy and perhaps shortly after being pitched into the chair of medicine. Are we to suppose that these men are jack of all trades and to a perfection in each?

Surely this seems to be a piece of injustice and we earnestly invite the Government's attention to it. We fail to understand why merit and not military rank be the criterion in awarding the different Government medical appointments. The public have a right to get an answer from the Government.

The medical profession in India, apart from those in the I.M.S. carry very little respect both from the public and the Government. These men who after a most tedious, long and liberal education settle in life to relieve the sufferings of their fellowmen, are kept in the cold corner of official and unofficial favour. In other parts of the civilized world, medical men are treated with respect by all, and we wish the same conditions will hold good here to.

When we take into consideration the inumerable risks attached to the profession in trying to alleviate human miseries that the flesh is heir to; we feel impressed while the necessity of holding the members of the healing art with much more regard, than we have hitherto been wont to. In conclusion, may we suggest, and earnestly appeal to the medical public at large in this country to form into combines and leagues with the object of safeguarding their rights. Unity is strength, and we doubt not if this virtue is allowed to be paramount amongst Doctors, both the public and Government will be constrained to show due respect to them, and their wishes.

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Current Medical News.

CHOLERA AT MECCA.

The Haj or pilgrimage to Mecca has closed, but cholera still rages in that holy city, the daily mortality being upwards of two hundred from that fell disease. Cholera may be said to be the special sickness of prilgrims, both Hindu and Mahomedans, in every country and climate. Wherever pilgrims congregate in any numbers there cholera is sure to follow. The utmost sanitary precautions taken by the English authorities sometimes fail to protect pilgrims against the consequences of their own habits which are in open and deliberate defiance of all the most elementary rules of sanitation. Men may often defy the laws of the land with impunity, but the laws of nature are very peremptory, and those pertaining to sanitation bring quick retribution on those who go against them. We have in the course of our rule tried to bring this home to the minds of the ignorant people here and have succeeded to some extent. But still cholera follows prilgrimage almost as the night the day, In Mecca during this present month of pilgrimage must have come from all parts of the Moslem world nearly a hundred thousand of the faithful. Already, in 1814, the great Arabian traveller Burckhardt estimated the number at 70,000. This great assemblage in such a narrow place as Mecca, is always, says Robertson Smith, a dangerous centre of infection, and the days of Mina especially, spent under circumstances originally adapted only for a Bedouin fair, with no provisions for proper cleanliness and with the air full of the smell of putrifying offal and flesh of animals offered for sacrifice at the great Id festival, drying in the sun, produce much sickness. Cholera is especially due to bad water, and owing to the peculiar customs of ablution the purest water gets contaminated in a short time—and we must remember that water is a rather scarce commodity in Arabia—when so many thousands perform their ablutions within a few days in a very confined space. The Turkish Government under whom Mecca is is not known for its vigour in anything except, perhaps misgovernment, and their sanitary precuations are very languid. Much therefore cannot be expected from them. To this must be added the sentiment of the people themselves, which not only makes them reckless with a truly Oriental indifference to death, but actually makes them court it, as they firmly believe that dying during the holy prilgrimage is the best kind of death for their faith, and that they go straight to heaven then.

When all these circumstances are taken into consideration the daily mortality of two hundred, appalling as it is, among a hundred thousand, will appear rather light. It is very hard to save the people in their own despite, as we know it to our own great chagrin in this country, nay in this city itself. Our plague measures taken in the best interests of the people themselves cost us a riot in our city which calls itself the first in India. In the matter of inoculation which is proved to be the best preventive so far known of plague, the people in this country offer immense difficulties though they ought to known that our zeal for it is perfectly disinterested and meant for their own good Verily any other Government but ours would have long ere now cynically exclaimed, using a modification of a famous phrase attributed to Louis XIV but really older than that heartless cynical monarch: "populus vult mori moriatur" Our present good Governor is just now proceeding in this matter by coaxing the people through the native journalists who are supposed to have an influence over them. There is some advantage in this, though we believe the influence of some of these journalists is stronger in doing mischief than in working good. The difficulties of the Turkish authorities are greater than ours, for they have in their midst in Mecca on the present occasion the ignorant and unenlightened of not one nation but of many nations. And moreover they are themselves not enlightened enough nor backed up by a stronger and sympathetic Government in their efforts, if they exert any, on behalf of measures to prevent or check the ravages of cholera amongst the prilgrims. The city of Mecca must be in a terrible plight just now. Its fixed population is estimated at about fifty thousand, to which must be added at the present juncture twice as many on account of the prilgrimage. On this estimate of a hundred and fifty thousand the daily mortality of two hundred from cholera alone is frightful. When Bombay with a population more than six times as large had a daily mortality of hardly double this number, or four hundred, we were aghast indeed at the terrible figure. But at the present rate of death prevailing in Mecca, Bombay if it suffered like that holy city would lose at least 1,200 daily. "Akit mun"! God forbid that our fair city should ever suffer to this extent. But it is the most forcible way of impressing upon our minds the terrible calamity which befalls Mecca nearly every year during this 'month of pilgrimage.' "Zul Haj," as it is called, but really this month of slaughter.

THE ROYAL MEDICAL SOCIETY.

Professor Haffkine has lost no time after his reinstatement in coming forward with a plea for inoculation, the remedy for plague with which his name has had a notorious connection. In addressing the Royal Medical Society he expressed the opinion that disinfection was useless, that the results of a campaign against rats were uncertain, and that inoculation had the merit of reducing the protected person's liability to attack to a third of the risk of the non-inoculated. Though these views no longer possess any novelty and may indeed be regarded as embodying the beliefs now held by most plague authorities in India yet, as summarised they suggest certain reflections on the influence of fashion in the medical world. Not many years ago disinfection was the only remedy. Large sums of

money were spent in washing and sprinkling with potent acids, and a great deal of popular discontent was excited, partly because the people resented the invasion of their homes by the disinfecting officers and partly because the smell of disinfectants is particularly offensive to the Indian. But disinfecting measures were persisted in until recent discoveries created the suspicion that remedy was absolutely ineffectual. Now there is no medical man who will not smile at the notion of using disinfectants as a meas of preventing the spread of a plague epidemic, as if this were a popular superstition which the learned have to combat. The revelation of the part which the rat plays in the dissemination of the disease led to a new policy of rat extermination. Traps and rat poison were substituted for carbolic acid and corrosive sublimate; rewards were offered for every rat tail brought to the health authorities; and statistics were produced showing that districts in which rat-killing had been energetically carried out had enjoyed a greater immunity from plague than nighbouring places in which the rats were left undisturbed. It is true that other statistics seemed to indicate that places in which no rats were killed had come off well as compared with other regions where the campaign had been vigorously pursued. But the balance of opinion remained in favour of rat-killing until a Japanese investigator demonstrated that the appalling fecundity of the rat gave man little chance in the unequal contest. And now the fashion is veering towards inoculation, which, by giving protection against the effects of infection, renders it unnecessary to kill rats. Strenuous efforts are being made in the United Provinces and elsewhere to induce the people to get inoculated. We have nothing to say in disparagement of the latest preventative, and we shall wait with interest the returns indicating what measure of success has rewarded the official propaganda. If the people flock to the inoculators in their thousands and continue to do so every nine months which is the period protected by inoculation, then Professor Haffkine and his fellow-advocates will be vindicated in their policy of recommending inoculation as the most efficient method of fighting the dread epidemic. It is obvious, however, that if the masses refuse to be protected by the Haffkine remedy, we are no nearer to success than before. To attempt to inoculate millions of unwilling people is as hopeless as to endeavour to destroy the fast breeding rat. Sooner or later the Government of India and the local Governments will find it necessary to make a definite choice between the two policies. There is much to be said in favour of both. Inoculation has obvious advantages for those who can appreciate its merits. By a simple and easy operation the inoculated person is placed in a position which makes him independent of sanitation and rats in their relation to plague. But we suspect that only the few will reap the benefit, and that money spent on an inoculation campaign will be largely wasted. On the other hand, it may be urged that the destruction of rats is beneficial, to whatever extent it may be carried. The loss which they cause to the community by their depredations must be enormous, and hence the reduction of the rat population must be a gain even if it has no effct upon plague. Again, by removing the rat we get rid of the rat-flea, the actual plague carrier, and it is surely more scientific to prevent intection from reaching the human subject than to make the human body the scene of a battle between the invading bacilli and Professor Haffkine's friendlies. In any case the readiness with which medical fashions change teaches the lesson that it is unwise to pin one's faith to the remedy which happens to be in vogue at any given time. It is quite possible that inoculation may yet go the way of disinfection. Some simple method of combating the rat flea is what is required, and we cannot believe that the ingenuity of inventors will be found wanting.

SHORT ITEMS.

The plague returns in Burma for last year show 8,637 cases as compared with 3,692 in the previous year. Two and half lakhs were expended in the destruction of rats, without thinning their ranks to any great extent. There was an increase in the amount spent on plague measures, which reached Rs. 4,52,000 as against Rs. 3,65,000 in the previous year.

Lieut.-Colonel J. T. W. Leslie, I.M.S., Sanitary Commissioner with the Government of India, proceeds on a year's leave from next Tuesday and Lieut.-Colonel C. J. Bamber, Sanitary Commissioner, Punjab, is gazetted to officiate.

A few cases of small-pox have occurred amongst Europeans at Cawnpore. Mr. Lymns, of the Victoria Mills, succumbed after ten days' illness. An Assistant Telegraph Master is also down with the disease.

During the week ending on the 11th instant the total mortality from plague numbered 2,823, to which the Bombay Presidency contributed 745, the United Provinces 530, Mysore 472 and Bengal 336.

No case of plague was recorded in the North-West Frontier Province in the week ending 11th instant.

A negress has died of cholera at Mecca.

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Current Medical Literature.

MEDICINE.

THE RONTGEN RAY TREATMENT OF EXOPHTHALMIC GOITER.

French (Munchener medizinische Worchenschrift) states that the medical treatment of this condition is to be preferred to surgical procedures and that he believes the x-ray treatment to be the most satisfactory of all. The writer describes five cases in which either great improvements or an apparent cure was affected by this means. In three of the cases no other remedial measures were employed, so that the complete relief of the symptoms that resulted must either be attributed to the action of the rays or it must be taken for granted that the condition had undergone spontaneous retrogression, the latter being an assumption which the writer does not believe is justifiable. In another case the symptoms disappeared only after the radiotherapy had been begun, and in the fifth case, although great improvement in the subjective conditions had been effected, the ultimate result is not yet certain. He believes that the Rontgen rays fulfill the causative indications in exophthalmic goiter, since they cause the abnormally active typhoid gland to diminish in size. They always exert a beneficial influence on the body weight and on the nervous manifestations, while the other symptoms, such as heart murmurs and exophthalmos, may also be caused to disappear. The prognosis is best in dealing with soft vascular goiters, which may completely subside under the treatment, while in the cases with hard nodular growths this is less likely to occur. The effects are most satisfactory the shorter the duration of the case has been.

—:oo:—

SURGERY.

REPORT OF A CASE OF REFLEX BRONCHIAL ASTHMA CAUSED BY THE PRESENCE OF NASAL POLYPI.

By C. M. Sandusky, M. D., Tampa, Florida.

Last summer a gentleman was referred to me by Dr. Bowen, of this city, for examination of his nose and throat. Patient was about 35 years of age, of good family history and habits. Said he had been a severe sufferer from asthma for the past four or five years, and had moved here from Buffalo, N. Y., about a year previous, thinking to benefit his health. He was a confirmed mouth breather. Examination showed the inferior turbinates on either side so greatly hypertrophied as to completely block both nostrils. It was necessary to use cocaine and adrenalin before the examination could proceed. When the tissue became contracted polypi were visible on either side, also a good seized septal spur on the right.

At this and subsequent sittings I removed 19 polyps, ranging from the size of a marble to that of a pea. Both inferior turbinates were cauterized and the spur removed from septum. After this I saw him from time to time and he reported himself entirely free from asthma and able to breathe fully through both nostrils at all times. In December he came back for further treatment, saying the asthma had returned worse than ever. At this sitting I removed three good sized polyps, making in all 22.

At the present writing he is free from asthma entirely, and has had no suggestion of it since December. I omitted to state that after the removal of the first 19 polyps there developed a most distressing reflex cough which was due to an elongated uvula. Removal of the excess portion of this structure resulted in an immediate cessation of the cough. After this he began to suffer from severe facial neuralgia on the left side. A single

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application of the galvanic cautery to the middle turbinate promptly ended this.

This most interesting and complex case presented three separate and distinct reflexes which developed one after another. First the asthma, next the cough, and then the one-sided tri-facial neuralgia. Another interesting feature was the violent return of the asthmatic symptoms upon the development of the last three polypi. From the length of time that has elapsed I think the case may be regarded as fairly cured.

—:o:—

OBSTETRICS.

THE OPERATIVE TREATMENT OF PUERPERAL PYEMIA.

By Dr. W. Moore (Intercolon Med. Journal of Austr., July 20, 1907.)

Trendelenburg recently called attention to the similarity of pyemia of otitic and puerperal origin and advised the same treatment in both namely the exsection of the thrombosed veins. The operations thus far done by Bumm and others, with this in view, have frankly not been encouraging. As the value of the method must stand or fall on actual results, it is interesting to note the cases narrated in this paper.

Case I. A young woman of 26, after an abortion, suffered chiefly from repeated daily rigors and high temperature. Under spinal anesthesia with stovain the abdomen was opned. Small collections of pus were found in the right broad ligament and the right ovarian veins were thrombosed. This thrombose. vein was traced upwards, tied and removed below the ligatured. Four days later the abdomen was re-opened; another attempt was made, under spinal anesthesia, to tie the vein above the thrombus at its junction with the vena cava, but failed. The patient died on the twelfth day.

Case II. A woman of 29, developed rigors and a temperature of 107° after a four-months' miscarriage. Because of the repeated rigors it was thought that a thrombo-phlebitis was present, and, on account of the tenderness in the right ovarian region, the right ovarian veins were looked upon as the parts affected. The operation proved this surmise to be correct. The posterior peritoneum was incised over the ovarian vessel and the vein was dissected out up to the duodenum, where it was cut between two clamps and dissected free almost to the uterus. The right tube and ovary were removed as well as the thrombosed vein. After a stormy seige, with the temperature at times rising to 106° and more, this patient ultimately recovered.

UNEXPECTED CURES IN INOPERABLE CARCINOMA OF THE UTERUS.

By Dr. F. Weindler (Zent. f. Gynak).—Three cases are described which were inaccessible to thorough and radical surgical treatment. In all recourse was had to the sharp spoon and actual cautery with later applications of pure carbolic acid. The cases were alive and apparently cured after periods of time extending over six to seven years. The diagnosis in all was established by the microscope.

THE TREATMENT OF EXTRA-UTERINE PREGNANCY, WITH A REPORT OF THIRTY-TWO CASES TREATED AT THE COOK COUNTY HOSPITAL.

D. A. P. Heinech gives the following summary of this article.

1. Only three of these women gave a history of previous sterility. Sixteen had had one or more children. Nine had had one or more miscarriages. One of these patients had seven children, another eight and two had four each.

2. The youngest patient was 18 years old; one was 19 years old; the oldest was 42; the next to the oldest 40 years old; 11 were between 30 and 40; 15 were between 20 and 30.

3. Signs of pregnancy, such as tender breasts, enlarged uterus, softened cervix were noted in about one-half of the cases.

4. Pain in the lower abdominal region, menstrual irregularities, such as delayed or skipped periods continuous vaginal hemorrhage, passage of a uterine decidual cast, etc, and a palable mass in one or the other or both fornices, were present respectively in 30, 28, and 31 cases. The author notes these three symptoms under a special heading, because he believes that there presence is highly suggestive of ectopic gestation and because he believes that the above justifies us in holding that the following symptoms, when associated, are most important aids in the diagnosing of extra-uterine pregnancy: (a) Abnormalities of menstruation. (b) Pelvic pain usually referred to one ovarian region. (c) Presence of a pelvic or pelvo-abdominal mass almost always distinct from the uterus. (d) In rupture signs of internal hemorrhage varying from increasing pallor and fainting spells up to complete collapse.

5. Pain, intermittent and colicky in character, was complained of by 23 of the patients; 5 experienced a single severe pain preceding rupture of the ectopic mass. In 20 cases palpation of the mass produced severe pain, and in but two instances was manipulation of the tumor unattended by pain.

6. Conception took place in the right Fallopian tube 17 times; in the left 14 times and not determined once.

7. Thirty cases were treated by the abdominal route; one by the vaginal route; one by the combined (vagino-abdominal) route. The latter case died. Drainage was employed in nine cases, necessitated in almost all instances by capillary oozing which apparently could not be otherwise controlled.

8. There were two deaths in the series, each due to acute general peritonitis. In one case numerous adhesions had to be torn; in another the pregnancy was much advanced and the operation was very complicated. Except in the two cases which died recovery was rapid and uneventful.

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PATHOLOGY.

ETIOLOGY OF TUBERCULOSIS.

Though the conclusions of Mazyck P. Ravenal concerning the etiology of tuberculosis contain no information that is entirely new, his statements are sufficiently positive, especially with regard to the alimentary origin, to be profitable for consideration. He says that—

1. The alimentary tract is a frequent portal of entry for the tubercle bacillus.

2. The tubercle bacillus is able to pass through the intact mucous membrane of the alimentary tract without producing a lesion at the point of entrance. This takes place most readily during the digestion of fats.

3. The bacilli pass with the chyle through the lacteals and thoracic duct into the blood, which conveys them to the lungs, where they are retained largely by the filtering action of the tissues.

4. Infection through the alimentary tract is especially frequent in children.

5. Milk from tuberculous cows is the source of infection in many cases. Our present knowledge does not enable us to state the exact proportion of cases of tuberculosis due to this cause, but it is probably considerable.

6. Tuberculosis can be communicated by contract, such as kissing, soiled hands, accidental injuries in postmortem work, or during the cleansing of vessels used by consumptives. These modes of infection play a comparatively small part in the dissemination of disease.—American Journal of the Medical Sciences, October, 1907.

MOTOR APHASIA AND ITS CORTICAL LOCALIZATION.

By Dr. Dejerine (L'Encephale, May, 1907.)

The topography of the cerebral cortex has been much extended since Broca's statement to the effect that the speech center is situated in the posterior third of the third left frontal convolution. It has been found by microscopical examinations that the extent of the lesions in diseased conditions of the cortex is by no means indicated by the macroscopical changes. Conclusive cases, with well circumscribed foci, are extremely rare. The author contributes two observations, the first concerning a typical case, of motor aphasia of several months' duration. After the patient's death, two years later, the anatomical basis was found in a lesion of the anterior two thirds of Broca's convolution. In the second case, the disease affected the middle of the third frontal convolution. The surroundings were but slightly involved in both cases, the operculum Rolandi the motor convolutions, the large ganglia, the internal and external capsules being free from disease.

DELUSIONS OF GRANDEUR IN GENERAL PARALYSIS OF CHILDREN.

By Dr. Babouneix (Rev. Mens. des Mal. de l'Enfance, 1906-7).

Paralytic dementia is of very infrequent occurrence in childhood and adolescence, and at this time of life chiefly attacks idiots and imbeciles. The course is a far slower one than in adults but remissions are uncommon. The onset of the disease interferes with the physical and sexual development of the patient. While delusions of grandeur are not common in children, they are not as rare as usually stated, occurring in 12·14 per cent, of the cases of juvenile paralytic dementia. They are characterized, as a rule, by the silliness and childishness of the concepts: the patient will say, for instance, that he is enormously rich, for he owns 25 cents, or 500 monkeys. Outside of general paralysis delusions of granduer in individuals under twenty years of age occur only in dementia precox.

—:o:—

THERAPEUTICS.

TREATMENT OF ACUTE NEURITIS.

In discussing the treatment of acute neuritis Rockwell speaks of the unsatisfactory and often even detrimental results obtained by the static spark, the faradic, galvanic and high frequency currents, and vibration. He reports ten cases of neuritis treated by phototherapy, with exposure to incandescent light of 500 candle powder. The majority of these cases were materially benefited by this treatment where other means had failed.—Medical Record, November 9, 1907.

IODINE IN TYPHOID FEVER.

Dr. D. Walsh, from personal experience, recommends highly the administration of one minim of phenol (carbolic acid) and two minims of tincture of iodine in a tumbler of water, allowing the patient to drink it as he wishes. Rapid cleaning of the tongue, lowering of the temperature, and cessation of diarrhœa followed in his experience.—British Medical,

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ESTORAL, A NEW REMEDY NASAL CATARRH.

This preparation is boracic-acid-menthol-ester of the chemical formula $B(C_{10}H_{19}O)_3$. It forms a white, tasteless, crystalline powder, with a faint menthol odour. It undergoes no change while dry, but in solution and in contact with the mucous membranes it quickly splits up into its components, the latter thus acting in statu nascendi. When applied to the nasal mucous membrane, both components, boric acid and menthol, exercise their respective influence. The preparation is absolutely non-poisonous and harmless. An occasional slight drawback is a burning sensation in the nostrils, especially when inflamed, sore, or hypersensitive. This unpleasant sensation can be avoided either by the use of a small glass tube through which the powder is drawn up into the nose, or by mixing Estoral with an equal quantity of sugar of milk.

Since the beginning of February, 1905, I have employed Estoral in all nasal catarrhs, acute and chronic, that have come before me, and my opinion as to its usefulness is as follows:—

In slight forms of acute rhinitis, Estoral, applied twice or thrice a day, relieves the symptoms and occasionally seems to cut short an attack. In severe forms of acute rhinitis the action is insufficient and transient.

In ozæna, improvement in the proper sense has not been observed.

The action of Estoral is very favourable in rhinitis sicca (simple atrophic rhinitis). It lessens the irritation to an extraordinary degree and to some extent promotes secretion. I have had several cases of rhinitis sicca under treatment for about twelve months, my patients preferring Estoral to any other preparation (including menthol iodol, which is a useful compound). They felt quite unhappy when at times the supplies of Estoral, furnished by Messrs. Zimmer, had given out. Although used by these patients for about a year, the preparation has lost none of its efficiency in their cases.

I am able, therefore, to recommend Estoral as an excellent remedy in the slight forms of acute rhinitis, and as a most valuable one in rhinitis sicca.

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This is one of the remedies in which the older physicians place great confidence. It certainly has an important place in therapeutics. It is one of the true hepatic remedies. It overcomes torpor and increases the functional activity of the liver. Its catalytic properties are most marked. It is a direct stimulant to waste and excretion, acting directly upon the glandular system. Its alterative properties are plainly apparent in its influence upon scrofula, secondary syphilis, and all blood disorders. It is a constituent of our best alterative compounds and had a place in all the prescriptions of the fathers for the treatment of syphilis. In goiter it will quickly reduce the enlarged thyroid and improve the general nutrition of the system. It will do all that is claimed for it, and even, more, if a good preparation of the agent is used. Anything else will be disappointing.

The use to which our physicians have seldom put it is in the treatment of sick headache. It can be relied upon with positiveness in many cases of this disorder, whether of a "bilious" or "nervous" origin. From one to twenty minims of the normal tincture is the dose, the smaller dose being preferable. —Chicago Medical Times.

SODIUM ANILINE ARSENATE: ITS ACTION IN SYPHILIS.

Uhlenhuth and his co-workers assert that this drug, given in sufficiently large doses, has an unmistakable action on the manifestations of syphilis, especially striking in the malignant forms. The drug does not influence the movements of the spirochætes in the test-tube, even in a 1-per-cent solution, but it seemed to banish the spirochætes from the blood completely in an infant with inherited syphilis, while no influence was apparent in another case of the kind. Six of the eleven syphilitics treated systematically with the drug exhibited symptoms of intoxication loss of appetite, and sleeplessness, accompanying severe colic-like pains or diarrhœa, while one of the patients exhibited albuminuria, with casts and blood corpuscles in the urine. The return of these symptoms after resumption of the drug established its causal relation.—Deutsche medizinische Wochenshrift.

OPSONINS: THEIR SPECIFICITY.

Dr. Russell, from repeated experiments, draws the following conclusions: (1) Following injections of bacterial vaccines, the increase of opsonins is probably due to the formation of immune opsonins which react specifically. (2) In saturation experiments with normal sera we are dealing with normal or common opsonins and these are not specific, since they can be removed by saturation with any one of a considerable number of bodies. (3) In saturation experiments with immune sera we have both the immune and the common opsonin present; the former is quite specific, while the latter is not. (4) B. Pyocyaneus is susceptible to spontaneous phagocytosis.—Bulletin of Johns Hopkins Hospital.

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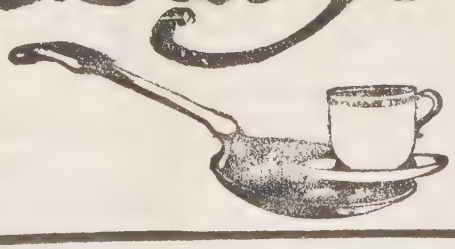

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No Contamination Possible

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MALTED MILK is more nourishing than cod-liver oil, and equally beneficial, not only to sufferers from phthisis, but to the Sick and Convalescents generally. It is the only prepared food for Infants and Children. It can be given where necessary from the moment of birth, and it is excellent for Nursing Mothers.

It is in Powder Form and can be prepared in a few moments by simply stirring in water.

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Pamphlets and directions on application, 8 As. Re. 1 & Rs. 2.

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Rx. Papaw Juice	½ gr.
Irisin Concd.	¼ „
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In each Tablet.

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Prepared by Leibig's process from the flesh and bones of Chicken, of exquisite flavour and readily taken by invalids, &c.,

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Messrs. Lawrence & Mayo, Ophthalmic Opticians of London, Calcutta, Bombay, Madras and Rangoon, prepare at their Lens Works, any combination of Lenses and Prisms within three days of receipt of the formula.

Correspondence

Audi Alteram Partem.

DANGEROUS DIVERSION OF SEWAGE.

To the Editor, The Indian Lancet.

Sir,—Babu Preonath Mullick made a startling statement to the General Committee of the Corporation with regard to the locality around Dhappa, the usual unsavoury odours of which have been greatly enchanced by intentional or careless diversion of the sewage. He said: the other morning I went down from Palmer's Bridge pumping station to a little beyond the Makalpottah sluice and I have to report to you that though it was low tide then yet the water and filth in the storm-water channel was full, whilst tnere should have been very little towards the east and none towards the west as the penstocks at the Palmer's Bridge pumping station are closed and not likely to be opened till the rains.

"It is clear that our men employed at the Makalpottah sluice who have to raise and lower the gates have not done their duty. This is not the only occasion on which this state of things has been reported. It is difficult to find out exactly the real cause. It may be due to the idleness of our men, or worse still, to attempts made of interested persons to influence the men not to raise or lift the gates at the proper time or keep it open as long as it should be done. The men should be warned, if not dismissed, after an explanation is called for from them.

"I also saw night-soil floating in the channel. This ordinarily cannot take place after we expended so many lakhs of rupees and built the town high-level sewer. The penstocks are now entirely closed, and no night-soil can go there. I could not conceive any other means by which it could go, and so I went to Mr. Phillips, Superintendent of the Palmer's Bridge Pumping Station, and on relating to him what I saw he seemed not to credit it, and I had actually to bring him to the khal. He was astonished and repeatedly assured me that his penstocks were closed.

"I felt some curiosity as to the reason, accordingly I went again towards Dhappa and ascertained how this scandalous state of things had come to pass. The Dhappa people conduct sewage farming, and for that purpose sewage has to be sent there by the old town sewer. Recently, on their requisition, Mr. Phillipps had pumped some sewage to the spot where the old haut was held, and a portion of the same had gone in to the storm-water channel through a culvert used for the purpose of draining the surplus rain water from that part of the Square Mile. This might have been either intentional or not. If it was done for the better rearing of the fish in the puker then it was intentional; otherwise it was reprehensible conduct, showing gross carelessness on the part of the people who wanted the sewage for farming purposes and never took care to see that it did not run out into the storm-water channel.

In either case the result to the neighbourghood is better imagined than described. The foul and noxious smell is absolutely sickening and unbearable, and I will not be surprised if a dangerous epidemic disease does not break out in that part, I have this day informed the District Engineer and he has I believe, taken immediate steps in the matter."

Yours etc.,

CHARMED.

LADY CLARKE AT THE J. J. HOSPITAL.

To the Editor, The Indian Lancet.

Sir,—Her Excellency Lady Clarke accompanied by Dr. Coghill visited the J. J. Hospital the other evening.

Her Excellency was received by Lieutenant-Colonel H. P. Dimmock, M. D., I. M. S., Senior Medical Officer, Lieutenant-Colonel W. H. Quicke, F. R. C. S., I. M. S., Senior Surgeon, Lieutenant L. F. Childe, M. B., I. M. S., First Physician, Lieutenant-Colonel C. H. L. Meyer, M. D., I. M. S., 2nd Physician, Major A. Street, F. R. C. S., I. M. S., Second Surgeon and Sister Mary Constance, Sister-in-Charge of the Nursing Staff.

Her Excellency was conducted over the whole of the main building.

She also inspected the New Wadia House for Nurses.

Her Excellency was then conducted to the Bai Motlibai Hospital for maternity cases and the Sir Dinshaw Petitit Hospital for women and children.

Before leaving, Her Excellency expressed herself thoroughly satisfied with all she had seen.

Dr. Nariman then brought forward a proposal which was seconded by Mrs. Muir Mackenzie: "That ten or more ladies be elected to the Committee, and that these ladies be formed into a sub-committee to be called the Ladies' Sub Committee." This proposal was carried.

A vote of thanks proposed by Sir Jamsetji Jejeebhoy and seconded by H. H. the Hon'ble Sir Sultan Aga Khan, to Her

Excellency for having presided at the meeting, waas carried and the proceedings then terminated.

Yors etc.,

D. V.

A NEW DISCOVERY.

To the Editor, The Indian Lancet.

Sir,—We are interested, distinctly interested, in the newest discovery of Dr. Danysz at the Pasteur Institute of a new method of killing rats easily. He has produced a bacteriological preparation fatal to the animals. The contagion spreads rapidly and causes a disease which forces rats to seek the air. People who recall the incidents accompanying recent epidemics will almost come to the conclusion that Dr. Danysz has re-evolved a certain obscure disease called plague! The symptoms appear similar. Armed with Danyszine and Haffkinine we ought to be able to make some progress at last! So long as we don't go and mix up the bottles by mistake!

Yous etc.,

R. F.

SLEPT FOR TWO MONTHS.

To the Editor, The Indian Lancet.

Sir,—A Denver butcher named William Schnabel fell asleep at his work on January 23 last, and efforts to arouse him were wasted. He was taken home and put to bed and slept throughout that day and the next, despite the confusion his condition had caused about the house. Eventually he was sent to the county hospital, where his case attrackted the attention of medical men throughout the country. Every effort was made to awake him, without avail. At the end of two months he woke up, but he was a changed man. When Schnabel went to sleep he was supposedly in full possession of his mental powers. When he awoke some subtle change had transformed him, and he was insane. He partially recovered his mind, and was released from the custody of the hospital authorities. He returned to work at the market, but not for long. Sleep came over him at unexpected times, and each time that Schnabel awoke the hospital physicians state that his mental condition became worse. He grew more violent at every awakening, finally his case was declared hopeless and he has now been taken to an asylum.

M. M. W.

Yours etc.,

TOMATOES AND CANCER.

To the Editor, The Indian Lancet.

Sir,—That absurd fiction about the tomato conveying cancer to its consumers has been cropping up again of late, and a recent analysis of the fruit, for such it is, by Mr. J. M. Albahary will therefore be of special interest. It contains the following substances, the figures expressing the percentage composition: water, 93·5; carbohydrates, 3·6; insoluble organic matter, 1·69; nitrogenous matter, 0·95; fat, 0·2; insoluble inoganic, matter, 0·11; and total ash, 0·74, of which 0·12 was calcium phosphate. 100 parts of the fresh fruit contain citric acid 0·69 part; malic acid, 0·48 part; and traces of oxalic, tartaric, and succinic acids. These present in these free state but in addition the tomato contains traces of acids combined with bases in the form of salts that are insoluble in alcohol and in water. There is thus nothing but wholesome nourishment in the solids of the tomato.

Yours etc.,

C. W. S.

THE LADY DUFFERIN NURSING FUND.

To the Editor, The Indian Lancet.

Sir,—The Annual General Meeting of the Countess of Dufferin's Fund, Bombay Branch, was held at Government House, Her Excellency Lady Clarke presiding. The following were present:—

H. H. the Hon'ble Sir Sultan Aga Khan, G.C.I.E., Mrs. Muir Mackenzie, Sir Jamsetji Jejeebhoy, Mr. W. D. Sheppard, I.C.S., Mr. W. S. Millard, Mr. Lund, Sir Sasson David, Sir Currimbhoy Ebrahim, Mr. Moses, Dr. Nariman, the Hon'ble Mr. Rahimtoola, Mr Bomanji D. Petit, Mr. N. N. Wadia, Mr. Jehangir Framji, and Rao Saheb Vassanjee Tricumjee.

The accounts having been passed, the meeting, proceeded to elect a general Committee and officers. It was decided that the members of the Committee be asked to serve again, only those members who had permanently left Bombay being omitted. Dr. T. B. Nariman and Mr. H. Cogill, were re-elected as Honorary Treasurer and Honorary Secretary.

The resignation of Mr. S. M. Moses, as a Trustee to the Endowment, Fund, having been received with regret the vacancy was filled by the nomination of Sir Sassoon David who kindly consented to act.

Yours etc.,

DION.

Those drugs which invariably effect the immediate relief of menstrual disturbances by acting directly, and in an agreeable manner, upon the reproductive apparatus, are collectively presented in

ERGOAPIOL (SMITH)

The preparation exerts an impressive anodyne and sedative effect upon the uterus and ovaries, and imparts vitality and functional activity to the entire generative system. While the function-promoting action of the preparation is surprisingly prompt, no untoward effects attend its administration.

ERGOAPIOL (SMITH)

IS OF INESTIMABLE IMPORTANCE IN THE TREATMENT OF

AMENORRHEA, DYSMENORRHEA

AND OTHER

MENSTRUAL IRREGULARITIES

DOSE.—ONE TO TWO CAPSULES, THREE OR FOUR TIMES A DAY, ACCORDING TO THE EXIGENCIES OF THE INDIVIDUAL CASE.

Ergoapiol (Smith) is marketed in metal boxes containing twenty capsules. The preparation is obtainable at all prescriptionists.

LITERATURE.—PAMPHLETS BEARING UPON THE THERAPY OF THE PREPARATION WILL BE SENT, POST PAID, ON REQUEST.

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It's the Quality

that has built up and maintained the sales of

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The Cocoa which is unequalled for flavour, digestibility, and economy in use.

BEST & GOES FARTHEST.

ORIENTA APERIENT WATER

Is a clear, pure water, containing the most soluble purgative salts effectively combined.

Acts as an intestinal antiseptic, as well as a purgative, eliminating germs and preventing auto-infection (ptomaine poisoning). This action is solely due to sodium sulphite contained as a fixed compound in the water.

Is acceptable to nearly all patients, as it never produces nausea, weakness nor thirst. In its use purgation is not followed by constipation, as is unfortunately and commonly the case with other purgative waters.

Does not weaken; it produces a tonic effect, stimulating the whole system; appetite is increased, sallowness and foulness of the breath disappear, headaches and vertigo vanish.

Is the only purgative water the use of which is unaccompanied with disadvantages in genito-urinary diseases.

Relieves women suffering with hemorrhoids and diseases of the uterus and ovaries, by reducing the congestion of the pelvic viscera.

Re-establishes the normal flow of bile, and is thereby a prophylactic in cases of biliary colic, due to the passage of biliary calculi.

Is indicated in cases of flatulency, bilious attacks, eczema, glandular enlargements and scrofula.

Benefits chronic nervous conditions, atony of the stomach and intestines, certain forms of diseases of the heart and circulatory system, chronic cases of skin affections and certain diseases of the lungs.

If used regularly alone, will often suffice in cases of influenza, diarrhœa, malaria, gastric and febrile disorders and infectious diseases by enabling the engorged, digestive, circulatory and lymphatic systems to regain their normal condition.

Acts in trifling doses. One small wineglass taken on an empty stomach immediately before breakfast produces a well-marked laxative effect in an adult. The dose for women or children should be reduced to one-half or one-third.

Is now considered an indispensable mineral water, especially in large city practices where it is important to husband the patient's strength, under penalty of their developing anæmia, or breaking down under the nervous strain and becoming neurasthenics.

Is cheapest because best. It is now prescribed by the leading physicians and stocked by all first-class retail druggists.

The ORIENTA Manufacturing Co., Cal., Ind.

A sample bottle will be sent free to any Physician if he will pay express charges.

SOLD EVERYWHERE.

EARTH AS A PURIFIER.

To the Editor, The Indian Lancet.

Sir,—Some place great faith in the purifying property of the earth and that after the rain has passed through a sufficient thickness of this natural filter, micro-organisms are not found, and that the water is free from organic matter. Koch is a great adherent of this view, but other authorities are equally against it in practice. The town of Frankfort derives a good water supply from the subsoil water of an extensive wood, but this wood is carefully kept free from habitation and other sources of contamination. No authority would, however, infer that you can with impunity dispose of refuse or have bazaars, graveyards, etc., over your origin of subsoil water; certain conditions are absolutely necessary before the subsoil water can be in any way trusted, namely :—(a) the locality must not be thickly populated; (b) any refuse to be disposed of must be spread over large areas, and on no account put in pits; (c) there must be living surface and on no account must this be removed; (d) the porous filtering subsoil must be of a sufficient thickness; if too thin then its purifying power by oxidation and filtration is limited, and the rise of the subsoil water must on this account be known. Here also it is important to know the character of the filtering media. If of a sandy nature purification can take place by virtue of oxidation, assisted by periodic flushing; on the other hand, if the subsoil contains much clay, especially black clay, in which there is a large percentage of organic matter such a process of purification is impossible, and we have in fact a culture medium. Now we cannot know that these necessary conditions exist unless a thorough examination of the ground has been made, and therefore the importance of a thoroughly reliable map.

Caution must be exercised when reliance is placed upon the purifying property of the soil, especially if the characteristics be unknown, for the soil is after all a filter, and all filters, whether artificial or natural, are treacherous, and are a source of danger if not constantly attended to by some competent person.

One must also be always on the look-out for the formation of fissures, which may occur at any time, and at once destroy one's filter, especially in view of the fact that impurities may travel long distances in fissures without undergoing oxidation or change. For example, the cause of the epidemic of enteric at New Herrington was traceable to a drain three-quarters of a mile away, and due to a fissure in the subsoil stratum. The above applies to subsoil water, but it is also important to know all about your collecting surface of the supply to deep or artesian wells; if far away the water will probably be pure, but if within a few miles the collecting surface ought to be protected. Especially is this the case if the soil is very porous or fissured.

Disused Wells.

Another source of pollution be to carefully guarded against the presence of dissused well, which are often used by natives for insanitary purposes. Should those wells be situated on the up-stream side of the station, they obviously are a source of great danger, and clearly show the necessity of keeping all the wells over the source of the water supply under rigid supervision. That subsoil water ought to be protected can be seen from the following list of water arranged according to purity :—(1) Deep spring water, (2) deep-well water, (3) upland surface water, (4) moor land water, (5) subsoil water (distant from aggregation of houses), (6) land springs, (7) river water, (8) subsoil water (under villages and towns).

In conclusion, I would quote the following from Thresh, which I think applies even more forcibly to India :—"Notwithstanding the immense progress which has been made in this country in recent years in practical sanitation and sanitary administration, outbreaks of preventable diseases due to pollution of water supplies have been all too frequent, Common sense suggests that if it is desired to obtain a supply of water a source should be selected, removed as far as possible

SAL HEPATICA

EFFERVESCENT SALINE LAXATIVE.
URIC ACID SOLVENT.

A combination of the Tonic, Alterative and Laxative Salts similar to the celebrated Bitter Waters of Europe, fortified by the addition of Lithia and Sodium Phosphate. It stimulates the liver, tones intestinal glands, purifies alimentary tract, improves digestion, assimilation and metabolism. Especially valuable in

Rheumatism, Gout, Bilious Attacks and Constipation.

Most efficient in eliminating toxic products from intestinal tract or blood, and correcting vicious or impaired functions.

WRITE FOR FREE SAMPLE.

BRISTOL-MYERS CO.
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On sale by Jobbers and
Thomas Christy & Co., London, Eng.

from any contamination agencies, and every reasonable precaution which science or experience can suggest should be taken to preveat either wilful or accidental pollution."

Yours etc.,

E. H.

WHAT IS FERMENTATION ?

To THE EDITOR, THE INDIAN LANCET.

SIR,—Although everyone knows something about this subject, there seems to be a great deal of confusion in the minds of many persons concerning its causes and effects. There are other ferments besides the alcoholic or yeast ferment—viz., the lactic, i.e., the organism wcich causes milk to go sour, the butyric, which takes place rancid fats ; the mucous and the acetic may also be mentioned. There are also several apparently unorganised ferments which have important functions in the various secretions of the human body. It is owing to the fibrin ferment contained in the white corpucles of the blood hat this fluid owes its power of coagulating and thus assisting in preventing excessive bleeding from a wounded part owing to the clot formed, which plugs the ruptured vessel. The Saliva also contains a ferment called ptyalin, which possesses the power of converting starch into sugar and thus assisting in the digestion of food. The stomach also contains the ferment called rennet, which causes milk to curdle. Other ferments are also found in the pancreatic and digestive juices of the body ; these also enable the blood to absorb nutriment.

THE STIFFENING OF THE MU CLES.

called rigor mortis, which comes on after death, is also due to the myosin ferment contained in the fluids of the muscle. When common mustard is mixed with water a ferment is also set free.

When yeast is added to sacharine fluids, as in ordinary brewing operations, it causes a chemical change in glucose or sugar, the chief of these being the liberation of carbonic acid gas, which either bubbles up and escapes into the air or becomes dissolved in the liquid ; alcohol, of course, is also formed at the same time.

The liquid alcohol, consists of carbon, oxygen, and hydrogen, its chemical name being hydrate of ethyl, and is represented by the following formula : $C_2 H_5 HO$. It is pungent aromatic liquid, and is easily distilled. Cane or common sugar is not fermentable, but must first be converted into glucose by one of the ferments present in yeast. The temperature most favourable for fermentation ranges from 70 deg. to 70 deg. Fahr. If the temperature is either very high or very low the process does not take place, since the animalcules, called saccharomyces cerevisiæ could not exist at these temperatures.

When urine is exposed to the air it undergoes decomposition ; its chief constituent, urea, splits up in ammonium carbonate.

Yours etc.,

W. G. L.

BUISSON BATH TREATMENT OF HYDROPHOBIA.

To THE EDITOR, THE INDIAN LANCET.

SIR,—As the hot weather is approaching, when precautions need to be taken against the possibility of bites from rabid dogs it would be of great value to the public at large if you would publish in your paper a list of Buisson Bath Institutes established in Calcutta and other places in India. I remember, about ten years ago, a list of these Institutes was given as a result of some correspondence on the merits and otherwise of the Pasteur system of treatment.

Those who remember this correspondence would be glad, I am sure, to know if establishments for treatment by the Buisson Bath exist anywhere in India to-day.—

Yours etc.,

PYTHIAS.

Wanted known, that a Dispensary, where all medical and surgical accessories are available has been opened at 3, Wellesley Street, under the name of Ellwood & Co.

Prescriptions dispensed day and night, and urine analysis done.

Dr. N. N. Dey, L.R.C.P. & S., Edin. L.F.P. & S., Glasgow &c., can be consulted daily between the hours of :—

8 to 9 A.M.

5 to 6 P.M.

In all disorders of the respiratory tract in which inflammation or cough is a conspicuous factor incomparably beneficial results can be secured by the administration of

Glyco-Heroin (Smith)

The preparation instantly diminishes cough, augments expulsion of secretions dispels oppressive sense of suffocation, restores regular, pain-free respiration, and subdues inflammation of the air passages.

The marked analgesic, antispasmodic, balsamic, expectorant, mucus-modifying and inflammation-allaying properties of

Glyco-Heroin (Smith)

explain the wonderful curative action of the preparation in the treatment of

Coughs, Bronchitis, Pneumonia, Laryngitis, Pulmonary Phthisis, Asthma, Whooping Cough

and the various disorders of the breathing passages.

Glyco-Heroin (Smith) is admittedly the ideal heroin product. It is superior to preparations containing codeine or morphine, in that it is vastly more potent and does not beget the by-effects common to those drugs

DOSE—The adult dose is one dram, repeated every two or three hours. For children of more than three years of age, the dose is from five to ten drops.

Glyco-Heroin (Smith) is marketed in one-pound bottles, thus enabling the physician to prescribe whatever amount the individual case may require. The prevailing prescriptions are for three ounces. The preparation is obtainable at all prescriptionists.

LITERATURE.—Exhaustive literature bearing upon the preparation will be sent, post paid, on request.

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Schering's

Argentamine. Ten per cent. solution of Silver Nitrate in Ethylenediamine. An organic Silver Salt possessing the property of penetrating very deeply into the tissues. Its use is not accompanied by the many inconveniences to the patient which are found with the ordinary Silver Salts.

Chloralamid. Superior hypnotic without harmful or unpleasant by-effects, having the following advantages over Chloralhydrate:—Its action develops more gradually. The depressing effect of Chloral upon the heart is counteracted by the action of the formamide contained in Chloralamid. It does not cause headache. Chloralamid should on no account be dispensed in hot solutions.

Lævulose. Is fruit-sugar for Diabetics, being perfectly assimilated, and constitutes therefore a superior dietetic also for consumptive patients.

Phenocoll. Soluble Phenacetine. A valuable anti-pyretic, anti-rheumatic, and anti-neuralgic. Recommended in malarial fever. Harmless to the action of the heart and circulation of the blood.

Piperazine. Freely dissolving urinary deposits, is promptly eliminated by the kidneys, and perfectly harmless. Strongly recommended in all cases of uric acid diathesis.

Sublamine. A preparation containing Mercury Sulphate and Ethylenediamine in chemical combination. By the presence of Ethylenediamine the irritating action to the skin is entirely avoided, and, what is equally important, a most phenomenal penetrative power is secured for the metallic disinfectant, inasmuch as the presence of Ethylenediamine prevents the coagulation of the albuminous substances of the skin usually produced by metallic agents, and thus permits of easy and deep penetration of the Sublimate without any inconvenience. Recommended for thorough hand disinfection. [of Berlin.
Registered Trade Mark. Manufactured under the control of Prof. Dr. A Nicolaier,

Urotropine. A valuable urinary antiseptic and uric acid solvent, very efficient in all suppuratory diseases of genito-urinary tract, pyelitis, cystitis, with ammoniacal decomposition of the urine, phosphaturia, and also in gouty and rheumatic affections, where active elimination of uric acid and the urates is required. Highly recommended in typhoid bacteriuria as a prophylactic against the spread of typhoid fever.

FULL REPORTS ON APPLICATION TO
A. & M. ZIMMERMANN, 3, Lloyds Avenue, London, E.C.

WE are walking in the dark when we prescribe a preparation of unknown strength. We are compelled virtually, to make a physiological test of the drug upon our patient. The manufacturing pharmacist should do this work for us. He has facilities that are not available to the physician and the dispensing pharmacist. Let the manufacturer of drug extracts standardize his preparations by chemical assay when possible, and by physiological assay when the older method is inexpedient. Then the physician will be spared the humiliation of palpable impotence in the face of danger. There will be no occasion for experiment at the bedside.—*From Editorial in Buffalo Medical Journal, U.S.A.*

The Test of Time and Experience

THIRTY YEARS OF CONFIDENCE on the part of the Profession have established, beyond all question, that

is a scientific exhibit of a combination of well-known drugs of the highest possible quality and at once recognizable by the therapeutist as a

MOST VALUABLE NERVE TONIC

The Survival of The Fittest

NERVOUS EXHAUSTION

NEW LIFE & VIGOR

Nervous Exhaustion, or Neurasthenia, as it is now called, is well defined by that world-famed scientist and investigator

DR. JAMES H. BEARD, M.A., M.D.,

to be "a chronic functional disease of the Nervous System, the basis of which is impoverishment of Nervous force, waste of Nerve tissue in excess of repair, hence the lack of inhibitory or controlling power—physical and mental—the feebleness and instability of nerve action, and the excessive sensitiveness and irritability, local and general, direct and reflex. The fatigue and pain that temporarily follow excessive toil or worry or deprivation of food or rest, are symptoms of Acute Neurasthenia, from which the chronic form differs only in permanence and degree. Nervousness is really Nervelessness." There are thousands of people who, given up as incurables, their strength and powers undermined as a result of Nervous Exhaustion, to whom "NEW LIFE AND VIGOR" are magic words, are languishing for the greatest of all blessings: Robust Health and Restored Vitality. To all such we commend the use of B. & S. SOLUTION, the celebrated remedy discovered by Dr. Lawrence, M.D., which has been used in all parts of the world for over quarter of a century.

B & S. SOLUTION

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This remarkable compound, the result of the latest developments of modern Chemistry, Pharmacology, and Therapeutics, is without an equal in all cases of Nervous Exhaustion and Premature decay, whether induced by worry, overwork, or other exhausting causes. As a real nervine tonic and invigorating agent it has no equal in the whole field of Therapeutics and may be relied upon to impart "NEW LIFE AND VIGOR," and to restore weakened constitutions to pristine strength and energy. When every other medicine has failed, B. and S. SOLUTION has been prescribed in the most inveterate cases by the best physicians with success, and there are thousands of living witnesses to attest to the benefits derived from this great modern invention. The Profession will find it to be without a rival and the finest medicine ever brought to their notice.

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Reviews of Books.

The Scientific Discrimination of Infant and Invalid foods. By Dr. Nandi.

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NOTICE.

MERCK'S 1907 INDEX.

(Third edition.)

An encyclopedia for the Chemist, Pharmacist, and Physician, stating the names and synonyms, source of origin, chemical nature and formulas, physical form, appearance and properties, melting and boiling points, solubilities, specific gravities and methods of testing, physiological effects, therapeutic uses, modes of administration and application, ordinary and maximum doses, incompatibles, antidotes, special cautions, hints on keeping and handling, etc., of the chemicals and drugs used in chemistry, medicine, and the arts. 472 pages. Bound in cloth. Primarily, Merck's 1907 Index is published for distribution in the United States, but owing to numerous requests, a number of copies have been set aside for sale in other English-speaking countries. So long as these reserved copies last, the publishers Merck & Co. University Place, New York, U. S. A., will send the book to any chemist, physician, or wholesale druggist, upon receipt of three shillings and six-pence, or eighty-five cents.

The general scope and character of this book are made sufficiently plain in the sub-title. It is a Chemical Encyclopedia. But, whereas Beilstein takes in all possible chemical combinations Merck's 1907 Index limits itself to the chemicals and drugs actually on the market, giving in regard to them information comparable to Beilsteins.

To those who have had previous editions, Merck's Index has become almost indispensable. This latest edition is bound to make many new friends, improved as it is by the addition of the newest products of the chemical industry, by the adoption of the latest nomenclature, and by the adherence to the most modern authorities.

Government Medical Notifications.

INDIA.

First class Hospital Assistant Abdulla, Indian Subordinate Medical Department, has been granted 8 months' leave on private affairs, with effect from the afternoon of 26th October 1907. The first sixty days are on full pay.

The services of Captain J. McC. A. Macmillan, M.B., I.M.S. are replaced at the disposal of His Excellency the Commander-in-Chief.

Lieutenant-Colonel J. T. W. Leslie, I.M.S., Sanitary Commissioner with the Government of India, is granted privilege leave for three months with furlough for seven months in continuation with effect from the 28th January 1908 or the subsequent date on which he may avail himself of it.

Lieutenant-Colonel C. J. Bamber, I.M.S., Sanitary Commissioner, Punjab, is appointed to officiate as Sanitary Commissioner with the Government of India during the absence on leave of Lieutenant-Colonel J. T. W. Leslie.

The services of Captain E. W. C. Bradfield, M.B., I.M.S., are placed temporarily at the disposal of the Government of Bombay for employment on plague duty with effect from the afternoon of the 3rd January 1908.

BENGAL.

Babu Sharat Chandra Datta, 3rd grade Assistant Surgeon, is granted privilege leave for two months, with effect from the 7th January 1908.

Babu Braja Gopal Chattarji, third grade Assistant Surgeon, is appointed to do supernumerary duty in the Medical College Hospital, Calcutta, until further orders, with effect from the 8th January 1908.

Babu Satish Chandra Mitra, second grade Assistant Surgeon, Gumla Sub-Division and Dispensary in the district of Ranchi, is granted, under article 359 of the Civil Service Regulations, extraordinary leave without allowances from the 11th to the 19th December 1907, both days inclusive.

Babu Gopal Chandra Mitra, third grade Assistant Surgeon, did supernumerary duty in the Medical College Hospital, Calcutta, from the 18th December 1907 to the 22nd January 1908, both days inclusive.

UNITED PROVINCES.

Lieutenant-Colonel L. J. Pisani, I.M.S., Civil Surgeon, Moradabad, is appointment to hold visiting medical charge of the Bijnor district, in addition to his other duties, vice Captain W. M. Pearson, I.M.S., on leave.

Major G. T. Birdwood, I.M.S., Civil Surgeon, is posted on return from leave, to Agra.

BURMA.

Captain R. D. Saigol, I.M.S., made over, and Captain A. Whitmore, I.M.S., assumed, charge of the Government Plague Hospital, Rangoon, on the forenoon, of the 14th January 1908.

Honorary Lieutenant and Senior Military Assistant Surgeon T. W. Minty assumed charge of the Civil Surgeoncy, Falam, Chin Hills, on the forenoon of the 16th January 1908.

AN APPEAL.

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This Institution was established with the object of affording facilities for a MEDICAL EDUCATION to Anglo-Indian and Native youths who, for various reasons, are unable to get admission into the existing Government Medical Colleges and Schools. It is under the management and control of an Executive Committee. The education is thorough and the courses complete.

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The Executive Committee solicit public support to enable them to fully and more fittingly carry out the objects of the Institution, more especially of the attached Hospital and Dispensary. The College, with its connected departments, have been maintained, in the past, partly from the fees of the pupils which is quite inadequate for the purpose. The expenses connected with the upkeep of the Hospital and Dispensary are enormous.

Funds are urgently required

1. **For medicines, surgical instruments, bedding, diet and other hospital necessaries.**

2. **For building a Hospital which, unlike the present building, will be the property of the College. For the "Hospital Building Fund" subscriptions and donations are specially solicited.**

Gifts of clothing, bedding, suitable furniture, furnishings, medicines, surgical instruments, microscopes, pathological and other specimens, medical books and medical journals (old or new) for the library, articles of food (suitable for European and Native patients, etc.), will be thankfully received.

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LEICESTER · DIED · AT · CHESTER ·
ON · 26^TH AUGUST · 1886 · AGED · 88 ·
AND · OF · EMMA · CATHERINE · LYNES ·
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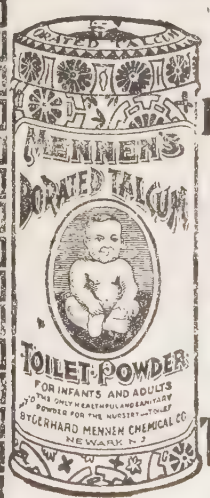

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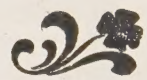

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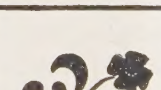

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